

UNIVERSITY MICROFILMS
313 N FIRST ST
ANN ARBOR, MICH.

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Story of the Week
Gags of the Week
How Can He Lose?
More Schemes to
Get Rich
Better Mornings
We View With Alarm
Short Sermon
Add Salesman Story

Story of the Week

"If you had only 24 hours to live, how would you spend them?" well-meaning fellow asked Jud Sayre.

"One at a time," he philosophized.

Gags of the Week

Definition of a raving beauty: Runner-up in A Miss Something contest.

"Uneasy rests the head that wears a frown." (Favorite aphorism of Mel Rodgers—Middle West Public Utilities.)

Whether a fellow winds up with a nest egg or a goose egg depends on the kind of a chick he married.—BOB TULL, Westinghouse.

"The fly that buzzes loudest usually gets swatted first."

OLD TIMER. One who remembers when a bureau was furniture.

PARKING LOT. A place where you leave your car to have dents made in the fenders.

How Can He Lose?

Name of Burma's new ambassador to the United States: U Win.

More Schemes to Get Rich

Loads of trivia, from fruit to books to garden bulbs, are available each month on a subscription basis. Apparently there is no end to these Of-the-Month clubs. Samples:

A Bulldozer-of-the-Month for contractors who need the latest behemoth machine "on time."

Pharmaceutical houses can initiate a Wonder-Drug-of-the-Month plan for doctors who have run out of excuses for persistently healthy female patients.

Wall Street can pitch in with an Issue-of-the-Month deal for speculators who want to play "blind baseball."

And there's an instalment-selling possibility of a Dark-Horse-of-the-Month for race track gamblers temporarily (as Concluded on Page 6, Col. 3)

Low Temp Cases Stockholder's OK Grab 30% of '55 Asked on Hupp's Commercial Sales Gibson Purchase

CHICAGO—Nearly 30 cents out of every dollar spent for commercial refrigeration equipment during 1955 was spent on low temperature cases—a new high volume for that class of equipment, Paul H. Sullivan, executive secretary for the Commercial Refrigerator Manufacturers Association, announced recently.

Sullivan made this observation in releasing comparisons in sales of commercial refrigeration equipment for each year between 1949 and 1955. Data was gained from information supplied by member manufacturers of CRMA.

The newly-released figures indicated that dollar volume of combined shipments of commercial refrigeration equipment (Concluded on Page 9, Col. 1)

Small Business Ice Flaker Introduced

ALBERT LEA, Minn.—The new "Scotsman" ice machine line and 1956 sales promotion plans were presented to regional sales managers at the annual sales meeting held here recently by American Gas Machine Co., division of Queen Stove Works, Inc.

One of the new models is the SF-75WSA "Super Flaker." With daily maximum capacity of 200 lbs., this machine "economically meets the moderate ice needs of small users such as diners, fountains, etc.," the company said.

"Patented freezing and flaking mechanism produces 'crushed' ice ready for instant use. The nature of ice produced by this exclusive method is such that the individual flakes will not freeze, cluster, or get mushy in storage.

"A heavily-insulated stainless steel storage cabinet stores up to 100 lbs. of flaked ice. Continuous and adequate supply of ice is assured by thermostatic control (Concluded on Page 4, Col. 3)

Boepple To Head Reorganized Alco Sales Department

ST. LOUIS—In order to keep pace with the rapid growth of the refrigeration industry and render better service to customers, Alco Valve Co. has reorganized its Sales Dept. along more functional lines, it was announced by John E. Dube, president.

This involves the division of the United States market into four regions, and the promotion of certain key (Concluded on Page 26, Col. 1)



G. J. Boepple

GREENVILLE, Mich. — At separate meetings held here, the directors of Hupp Corp. and the directors of Gibson Refrigerator Co. approved an agreement whereby Hupp is to purchase the business and assets of Gibson.

This announcement was made by John O. Ekblom, chairman of Hupp's Executive Committee, and Frank S. Gibson, Jr., chairman of Gibson.

A meeting of Gibson stockholders is called for April 25 to (Concluded on Page 23, Col. 1)

San Francisco May Drop Small Units from Code

SAN FRANCISCO—No state contractors license will be required to install or service self-contained refrigeration and air conditioning equipment containing less than 15 lbs. of a Class 1 refrigerant, according to a final draft of a proposed building code for the city and county of San Francisco.

This in effect would exclude most self-contained units of 5 hp. or less.

The proposed code, which is a revision of the present city code, has already been passed on first reading by the board of supervisors for the city and county. After it has been published in the *San Francisco News*, which is the official newspaper this year, it will come up for second reading and final passage.

The revised code contains new (Concluded on Page 8, Col. 1)

Koch Offers New Merchandisers

KANSAS CITY, Kan.—Koch Refrigerators, Inc., has introduced a new line of merchandiser market equipment under the trade-mark "Sell-O-Vision."

The series is completely new, and has been expressly engineered to further impulse buying by stressing full product visibility and convenient access.

The Sell-O-Vision series is low in height, 37 in. both front and rear. Stainless steel is used for metal trim and cart guards, and porcelain for front panels.

Special emphasis has been placed on the proportions and design of canopies, so that good display is projected right out into the store.

An exclusive feature is the new "Shopper Shape." In addition to plenty of toe room, each model has a "pinched-in waist" to afford effortless vision.

Koch uses color bands of translucent corrugated plastic in Sir- (Concluded on Page 5, Col. 1)

BTC Purchases Artkraft Line of Beverage Coolers

CORTLAND, N. Y. — The Brewer-Titchener Corp. here has purchased all rights to the manufacture and sale of Artkraft beverage coolers, Frederic A. Celler, BTC vice president in charge of sales, announced recently.

Artkraft beverage coolers formerly were manufactured and sold by Artkraft Mfg. Co., Lima, Ohio.

"The addition of Artkraft beverage coolers will enable us to broaden our refrigeration operation," Celler declared. "BTC's considerable experience in the refrigeration field fully equips us to maintain, and further enhance, the fine reputation which Artkraft coolers now enjoy."

The beverage coolers will be produced in the 122-year-old firm's modern, single-story New Milford, Pa. plant.

"Our new beverage coolers will be distributed through the same channels as used by Artkraft," Celler said. "Artkraft merchandising and sales policies (Concluded on Page 26, Col. 1)

House Group Favors Parts Tax Repeal

WASHINGTON, D. C. — Repeal of the manufacturers' excise tax on refrigerator parts and components is one of the many changes in Federal excise tax laws recommended recently by a House Ways and Means subcommittee.

The subcommittee approved most of the suggestions made to it earlier this year by Treasury and Congressional tax staffs. But it rejected the staffs' recommendation for retroactive reversal of the Court of Claims ruling in the "Frigidaire case."

The full Ways and Means Committee will study the subcommittee's recommendations and put into bill form those it accepts.

Observers look for a battle to develop in the full committee on the tax staffs' proposal regarding the Frigidaire ruling. Several key Democrats may try to get (Concluded on Page 23, Col. 2)

Refrigerator Sales for '55 Top 4 Million

DETROIT—Turning in their best performance since 1950, American manufacturers of household electric refrigerators sold more than 4,000,000 units during 1955, AIR CONDITIONING & REFRIGERATION NEWS estimates.

The News put the total figure at about 4,075,000 units.

The 13 to 15 manufacturers who report their sales to the National Electrical Manufacturers Association, sold 3,993,603 domestic refrigerators during 1955.

The Nema firms topped their 1954 effort by 20%. Their 1955 record came within 5% of 1948, their second best year, but fell 32% short of record-smashing 1950, when they sold 5,848,579 units.

Sales within the United States by Nema firms numbered 3,685,166 refrigerators.

This was also 20% better than in 1954.

They sold 70,329 units in Canada, 21% more than in 1954, (Concluded on Page 23, Col. 4)

St. Louis Residents Fight Assessment on Water-Cooled Units

ST. LOUIS—Attempts are being made by residents of St. Louis County to get a review of the \$40-a-ton assessment on water-cooled air conditioners, which is scheduled to go into effect in May, 1957.

The \$40-a-ton assessment has been allowed by the Missouri Public Service Commission to the St. Louis County Water Co., on the water company's petition that some action was needed to curtail use of water in air conditioning systems.

It was felt by the water company that the assessment would induce users to install water-saving devices on the units.

At a recent meeting of St. Louis County residents, a start was made on circulating a petition requesting the commission to review the ruling.

BEHIND PAGE ONE . . .

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To be **SURE** of Satisfaction

Be **SURE** to Specify
READING
COPPER TUBING

FOR REFRIGERATION &
AIR CONDITIONING EQUIPMENT



READING TUBE CORPORATION

EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Revere Adds 3¢ a Lb. To Copper Mill Prices

NEW YORK CITY — Revere Copper & Brass, Inc. has increased prices for copper mill products by three cents a pound. The company said prices for all its alloys also are being raised in proportion to the copper content.

Stating that the new prices are on the basis of 49 cents a pound for its copper supply, Revere explained that the prices it is paying for raw copper and copper scrap require the changes in the prices of its copper products.

Brass mills and other copper consumers reportedly have been paying from 46 cents a pound charged by producers to 54 cents to 54½ cents for refined copper from custom smelters.

In late February, Revere raised its prices three cents a pound.

N.Y. Court Kills Ban On Milk Sales from Automatic Vendors

BUFFALO — Lackawanna's ordinance prohibiting the sale of milk from refrigerated coin-operated vending machines has been declared unconstitutional.

The city was permanently enjoined by Supreme Court Justice George T. Vandermeulen from enforcing the ordinance.

He notified Attorney George J. Saab, representing the People's Dairy, Blasdell, that "an inspection can be made of the machines wherever located just as inspections are made in dairies, milk dispensing plants, and on the street."

The dairy on Jan. 26, 1954 installed a coin-operated refrigerated milk vending machine outside a regular place of business with no operator present.

The city brought an action to stop the sale of milk from the machine. The city claimed it violated an ordinance prohibiting its use on the grounds it is impossible to properly inspect and supervise the quality of the milk without giving advance warning to the proprietors of the device.

Bricker Named Marketing Head by Whirlpool-Seeger

ST. JOSEPH, Mich.—Appointment of John L. Bricker to the new position of director of marketing for Whirlpool-Seeger Corp., effective March 19, was announced recently by John A. Hurley, vice president of the company.



Bricker, formerly director of merchandising for Colgate-Palmolive Co., will be responsible for sales, advertising, merchandising, and market research at Whirlpool-Seeger.

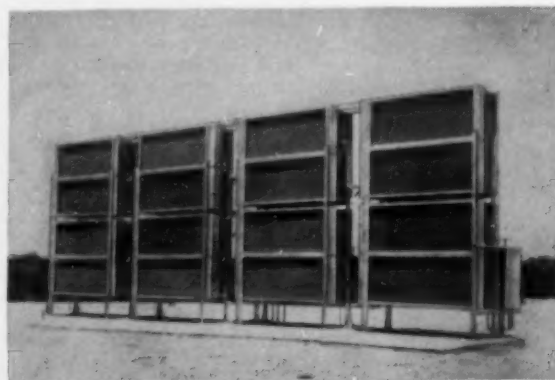
Hurley said Bricker "is a key addition to the management of the Whirlpool-Seeger staff."

100 TON BARRIER

Crashing the 100 ton barrier

with **KRAMER**
UNICON

in semi-tropical climate



UNICON SUCCESSFULLY MET THE TEST THROUGH THE SEVERE SUMMER OF 1955

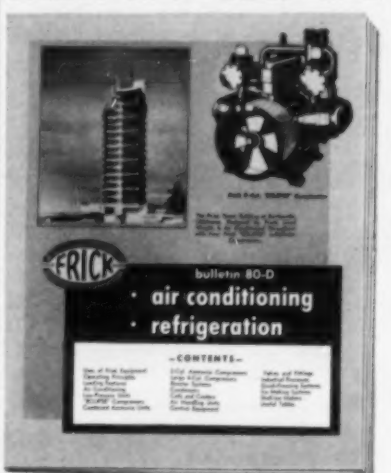
You, too, can crash the big tonnage barriers with UNICON, the industry's finest remote-type air-cooled condenser. Put Kramer's 18 years of "treasured know-how" in the proper use of air as a condenser coolant to work for you.

Photo of Kramer UNICONS mounted on roof of Handy-Andy Supermarket in San Antonio, Texas, used with 100 ton air conditioning system. Supplied through United Supply Co., of San Antonio and installed under the direction of Harold Vogt.

Write for Bulletin U-210-L

KRAMER

KRAMER TRENTON COMPANY
Trenton 5, New Jersey



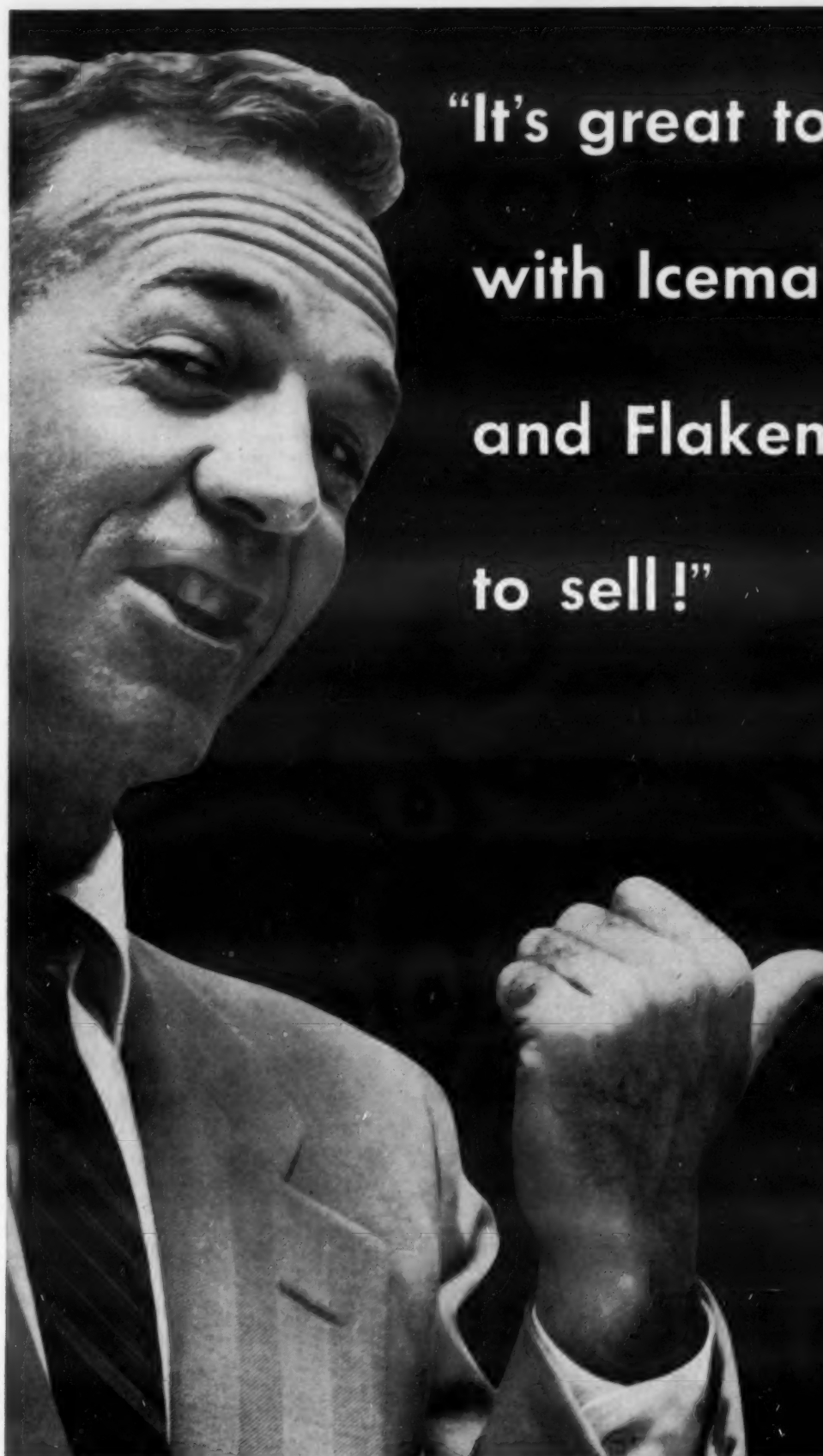
GET THIS NEW FRICK BULLETIN

Which tells about the industry's most complete and versatile line of commercial and industrial cooling equipment.


A note on your company letterhead will bring you this 32-page book (140 illustrations), with our compliments. Write today.

Some good territories still open for qualified Distributors.

Frick Co.
WYNESBORO, PENNA. U.S.A.



"It's great to be a Carrier dealer... with Icemakers and Flakemasters to sell!"

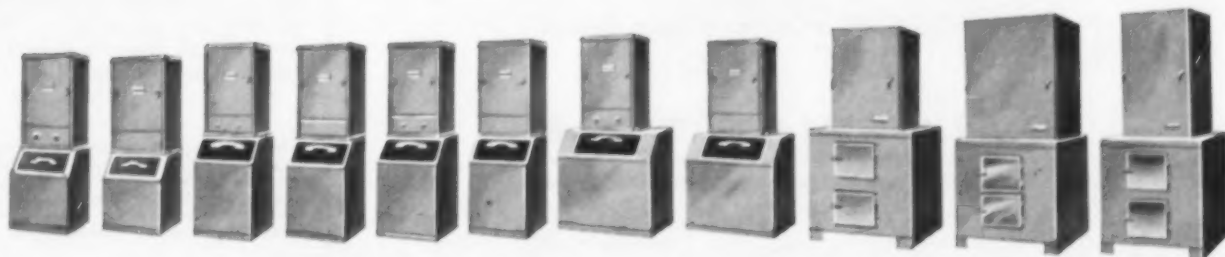


Because you sell true capacities! No promises of "up to so many pounds of ice per day." Not when you sell Carrier Icemakers and Flakemasters. Instead, you have accurate field-tested capacities—worked out for every operating condition—and *certified in writing!*

Because you sell believable icebill savings! Your prospect uses his own figures to prove his own icebill savings. No "blue sky" estimates. You use down-to-earth dollar-and-cents language—the kind every businessman understands—and trusts!

Because you sell a complete line! Trying to sell one or two models to handle all the needs of every type of ice user is up-river selling all the way. With Carrier you have eleven versatile models in your line—one to match every ice requirement *exactly!*

Because you get Carrier support! You can count on Carrier to help you every step of the way with (1) complete how-to-sell training programs, (2) effective help-you-sell local promotion and advertising, (3) on-the-spot technical assistance, (4) liberal financing and stock ordering plans.



It's time to call your Carrier Distributor. You'll find his name in the Classified Telephone Directory. Or write Carrier Corporation, Syracuse, New York.

Carrier

automatic ice machines

WHAT... WHEN... WHERE

— A Guide to Coming Events of Interest

- Gas Appliance Manufacturers Association (GAMA)
Annual Meeting
April 19-21, The Greenbrier, White Sulphur Springs
- Air-Conditioning & Refrigeration Institute (ARI)
Annual Meeting
May 7-9, The Homestead, Hot Springs Va.
- National Restaurant Association (NRA)
Convention and Exposition
May 7-11, Navy Pier, Chicago
- Mechanical Contractors Association of America (MCAA)
Annual Meeting
May 15-18, Kentucky hotel, Louisville, Ky.
- American Society of Refrigerating Engineers (ASRE)
Summer Meeting
June 3-6, Cincinnati
- Edison Electric Institute (EEI) Annual Convention
June 4-7, Atlantic City, N. J.
- National Oil Heat & Air Conditioning (NOHAC) Exposition
June 11-15, The Coliseum, New York City
- American Society of Heating & Air-Conditioning Engineers (ASHAE) Semi-Annual Meeting
June 18-20, Washington, D. C.

New Ice Flaker--

(Concluded from Page 1, Col. 2)

trol. When the bin is full, the machine automatically shuts off. It starts again as the ice level in the storage bin indicates."

Featuring compact design for under-the-counter installation, the new model includes all of the popular features of Scotsman Super Flakers of other capacities, ranging up to 2,000 lbs. daily maximum, according to the company.

At the three-day meeting, R. J. Lickteig, sales manager, introduced 15 new models of the Scotsman "Super Bin," storage bins for Super Flaker ice machines. Also shown was the new one-ton Super Flaker.

Scheduled to follow the meeting were distributor sales conferences in Dallas, Atlanta, New York City, Chicago, Omaha, and San Francisco.



GATHERED for "Scotsman" regional sales managers' meeting are (front row): O. A. Kirkpatrick, Pompton, Lakes, N. J.; C. A. Reed, service manager, F. W. Whitcomb, Milwaukee; and L. A. Burbank, Lynnfield Center, Mass. (Back row): L. M. Brewster, Dallas; Wm. Lapin, Los Angeles; C. H. Boyd, Atlanta; and F. L. Gordon, Winnetka, Ill.

RIGHT: New "Scotsman Super Flaker" is designed for under-counter installation, it is said, with daily maximum capacity of up to 200 lbs.



SAVE WITH WOLVERINE

introducing **Wolverine**

ROLL-O-TUBE*

a new name
for a modern product

A TIME AND LABOR SAVER

The Wolverine Roll-O-Tube carton saves time and labor each day for wholesalers and users alike. Its large-sized print and industry-approved color coding make content identification fast and sure. Because it is super-thin, you save valuable floor-space—stack more tube in a given area. Because it rolls like a hoop and has a convenient center hole for arm or shoulder carrying, you speed up handling time. These features are important to your customers, too—as are Wolverine Roll-O-Tube's zip-quick gummed tape for easy opening and its use as a reel with the tube remaining in the carton.

● SAVE MONEY

Savings in time result in savings in money. You'll find increased dividends in Wolverine Roll-O-Tube's ability to cut corners. Next time you order copper water or refrigeration tube ask for Wolverine Roll-O-Tube. And remember it's the only carton that tells your customers to BUY FROM YOUR WHOLESALER. Helpful, too, is Wolverine's booklet "Wolverine Tube is Easy to Sell." Write for your copy, today.

WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.



WOLVERINE TUBE

Division of Calumet & Hecla, Inc.

MANUFACTURERS OF QUALITY-CONTROLLED TUBING AND EXTRUDED ALUMINUM SHAPES

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA • SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 18, NEW YORK

For more information about products advertised on this page use Information Center, page 16.

Mitchell Lighting Div. Sold to Compco Corp. Effective March 19

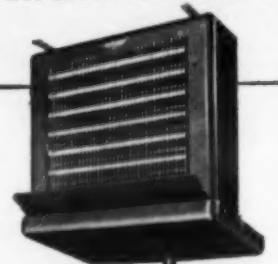
CHICAGO—Sale of the lighting division of Mitchell Mfg. Co. to Compco Corp., manufacturer of fluorescent and incandescent lighting fixtures, was announced recently by J. W. Alsdorf, president of Mitchell and Cory Corp.

Effective date of the sale is March 19.

Sale price was reported at approximately a half-million dollars, the Cory Corp. chief executive asserted.

**LARKIN MEANS
LOW OPERATING COSTS**

FROST-O-TROL® AUTOMATIC
HOT GAS DEFROSTER SYSTEM



The purchase price of any product is often misleading, for it precludes the cost of long-run operation. All Larkin products are engineered for the lowest possible operating costs, yet they are priced right. That's why Larkin leads the field for long-run, low-cost operation.

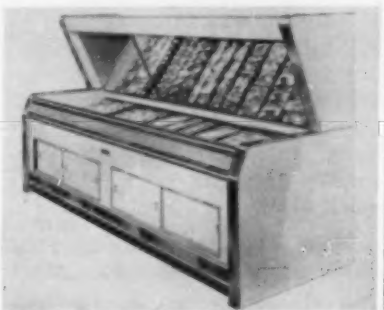
Manufacturers of the original Cross-Fin Coil
• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS

319 MEMORIAL DR., S.E. • ATLANTA, GA.



TWO MODELS of Koch meat merchandisers in 7 and 10-ft. lengths, having 35-in. sliding glass canopy for service from back room, are available in single or double duty, and for produce and frozen foods.



SHOWN is 10-ft. long Koch "Sell-O-Vision" meat merchandiser with 29-in. sliding mirror canopy with extra storage below. Also available in single duty 7 and 10-ft. lengths, the unit can be used for produce or frozen foods.

Koch Offers 2 Merchandisers --

(Concluded from Page 1)

loin Red, standard for meat; Iceberg Green, standard for produce; and Frozen Gold, standard for frozen foods and ice cream. The color-bands are optional, and can be easily installed, or removed, without tools.

There are 13 basic models, with eight sets of variations. Any one of the series can be used for six distinct types of installation because of basic design features and factory-installed conversion features. These are the six uses possible with each model:

1. Island display, with customers seeing identical trim both front and rear.
2. Wall display, without canopy.
3. Wall display, with canopy. (3 different kinds).
4. Rear service display, without canopy.
5. Rear service display, with canopy. (2 different kinds).
6. Double island display, with "flat-top" or canopy.

The entire Sell-O-Vision series is matched for height, depths, profiles, and canopies.

The Koch models designed for produce display feature an adjustable "belly" deep enough to hold watermelons, or shallow enough for a single layer of lemons.

Koch has a 600-lb. ice flake maker (for 20 ft. of case) and a 1,000-lb. ice flake maker (for 40 ft. of case) that matches these cases in profile and can be set between them or at either end.

Koch produces three types of meat display cases in five different models for single duty, double duty with rear opening, and double duty with front opening.

Series 5100 has adjustable shelves for slope in either direction, which can be set deep enough for turkeys, or shallow enough for cube steaks. The double duty models are not as deep as the 5100 series, but have two shelf levels of storage space behind sliding doors.

Each level is high and deep enough to take loaded 30-in. platters, and the bottom of the sliding door opening is 12 in. up from the store floor, to clear any platform or "duckboard" arrangement on the floor.

Koch's frozen food models have a capacity of almost 1/2 ton per 10-ft. length, or a 1,400 average package capacity for the 10-ft. model. These are single duty, forced air cases with electric automatic defrosting.

The ice cream merchandisers, which are full-opening display cases, have, in each 6-ft. unit,

a 700-pint capacity displayed in a 24-in. wide compartment.

Used for island display, they afford 12 ft. of open display space. These cabinets are completely self-contained, with fully automatic defrosting specifically designed for ice cream handling.

EDWARDS CO-AXIAL FREON CONDENSERS The LATEST DESIGN IN WATER-COOLED FREON CONDENSERS

—give you these SELLING advantages:

1. They use 35% LESS WATER
2. Cost reduced 30-40%
3. Stock sizes—1 to 7 ton
4. Many compact configurations
5. Easy installation
6. Simplified connections
7. Economical operation

Send for catalog TT-625 TODAY—or call TERHUNE 5-2808

EDWARDS 100 ALEXANDER AVENUE
ENGINEERING CORP. POMPTON PLAINS, NEW JERSEY



A TYPICAL CONFIGURATION—EFFICIENT, COMPACT, DESIGN



'THIS HAS A BEARING ON COOLING TOWER PERFORMANCE'

So Halstead & Mitchell
engineers said:

Nothing has more bearing on cooling tower performance and life than do tower fan bearings. On them turn the induced draft cooling tower's *only moving parts*.

Announcement by Halstead & Mitchell engineers of a permanently sealed and lubricated fan bearing means a bearing so designed as to completely eliminate moisture—and consequent rusting of the bearing balls and races. The *elimination of periodic greasing* cuts your tower maintenance costs to an absolute minimum... literally adds years to cooling tower life.

With not a single bearing failure reported from the hundreds of these "new bearing" towers in actual use, Halstead & Mitchell offers you... now more than ever... the best buy in cooling towers on the market today

SUPER-QUIET, 4-BLADE FANS, TOO!

There are new fans, too, on Halstead & Mitchell Cooling Towers—deep-pitch fans which operate at much, much lower speeds—actually *cut cooling tower noise level in half*. Sturdy, stainless steel fan blades... stainless steel fan shafts... make sure your tower will have not only a quiet life, but a long one, too!

For Complete Details, Write for Bulletin CT-584



Halstead & Mitchell

BESSEMER BUILDING, PITTSBURGH 22, PA.

20-Year
Guarantee!

on the wetted deck surface against rotting or fungus attack is an extra given you only by Halstead & Mitchell. Combined with the H & M Protected Steel concept, it offers unsurpassed protection against water and weather.

H&M COOLING TOWERS ARE AT LEADING
WHOLESALEERS EVERYWHERE



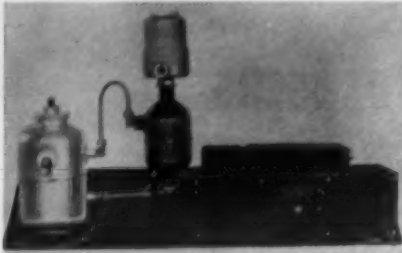
New Bearing available 5 thru 50 Tons

For more information about products advertised on this page use Information Center, page 16.

REFRIGOTRON

**Positive Protection Against
Power Loss, Refrigerant Loss,
Undesirable Temperature Changes**

- WARNS AUDIBLY, VISIBLY
- ADAPTS TO ALL SYSTEMS 1/4 to 30 HP—AND LARGER
- CONTENT SPOIL-AGE INSURANCE
- TESTED AND PROVEN



You can profit by protecting your customers against costly system failures with this revolutionary new warning device.

Distributors, Sales Agents Wanted—Write Now!

ELECTROSONIC PROTECTIVE INSTRUMENT CORP.
COMMERCIAL ST. AND NEW SOUTH RD., HICKSVILLE, N. Y.

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)
usual) out of funds.

Additionally, a Cartel-of-the-Month for international financiers, and Husband-of-the-Month for Hollywood blondes, could be entered in this Derby.

Howabout a chance on something we husbands and fathers would love: a subscription to a guaranteed Silence of the Month?

Better Mornings

Researchers in the Max Planck Institute of Labor Psychology have determined a typical pattern for repetitive human accomplishment during an average working day.

For example, the speed of a conveyor belt can be adjusted

so that it will increase late in the morning (gradually attaining full speed just as humans do), slow down after lunch, attain higher speed in the afternoon, and slow down properly toward the end of a human's work trial.

Most important finding: our efficiency is lowest before noon.

Automation, where is thy sting?

Will YOU adjust in timely fashion when the 30-hour week overtakes us? Will you still arrive at the office, half-dead at 9 a.m.—then go out for a re-viving morning "coffee break?"

Entirely unnecessary, it would seem.

Honestly, the Second Industrial Revolution (based on automation and coming electronic marvels) may secure a 20-hour week for our progeny. And then everyone can rest, sleep, work, and think on a simple schedule.

We View With Alarm

If you're in a friend's house, and hear music coming from a warm air register, don't fear you're losing your marbles.

Your friend may have a new gadget which distributes ecstatic music all over through warm air ducts. An amplifier can be bolted onto the side of the furnace plenum, and wired to a home radio, record player, or TV set, to produce this astounding decibellment.

Inventor John Brush, president of Kodiak Corp. in Cleveland, has announced that patents on this amazing sort of thing have been applied for, and that he is planning to market it.

Measuring 8 by 10 in., his Loudness Thing needs only four nail holes for installation. Tin snips or a can opener can be used to make the opening in the duct metal.

Only vibration dampener required is a simple gasket placed between the amplifier case and the duct.

This piped music is unaffected by the speed of air flow in the ducts.

"Claire de Lune" will come through just as well as "Shake, Rattle, and Roll."

Attach a kitchen microphone to the amplifier. If your family is scattered about the house at meal time, mom can bring kids to the table by yelling into the mike: "Chow down" (if she's the genteel type) or send a booming "come and get it" through the ducts (if she has six kids).

Or, this system can be placed near baby's crib so mom can be alerted to an emergency when she is working elsewhere in the house.

If you want to spend a little extra for wiring, said device can be rigged up for sounding a fire alarm—or the arrival of mother-in-law.

This amplifier system eliminates costly wiring required for transmitting music about the house by other means, naturally.

Personally, we take a dim view of this development.

Sweetest Retribution

This winter "Dope" has experienced some mighty satisfactory moments after snowstorms. Son Greg is big enough to shovel off the sidewalks and driveway!

That's a big deal for any father, and particularly to "Dope," who grows more and more allergic to manual labor as the sedentary years roll by.

Which reminds us that a wonderful thing happened in nearby Monroe, Mich., coupla weeks ago. Surely all of you have been exasperated when, after laboriously heaving snow off your driveway, a city snowplow would come along the street and pile up a four-foot icy barrier across your entrance?

Well, this Monroe man did something about it. He shoveled all the snow off his driveway onto the street, then poured water over it and let it freeze overnight into a huge block of ice.

Next morning the snowplow jockey banged into this barricade, and was knocked off his perch into a snowbank across the street.



LEADERS RELY ON LAU

25 Years Building Better Blowers

Special engineering, special manufacturing developments and highest standards of quality have kept Lau ahead for the past 25 years. And now, during our Silver Anniversary Year, Lau continues to set the pace in the air-moving equipment field.

THE TRIUMPHANT TRIPOD



THE LAU BLOWER COMPANY

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19-4, 56



WORLD'S LARGEST MANUFACTURERS OF AIR-CONDITIONING BLOWERS

Test Shows Zero-Sorption Point Can Be Reference Point To Check 3 Desiccants

ATLANTIC CITY, N. J.—“Zero-sorption” points can be used as reference points in checking some desiccants, the American Society of Refrigerating Engineers was told here.

Research into the problem, which has a bearing on standards for desiccants, was described in a paper prepared by Dr. Walter O. Walker and James B. Hostettler of the University of Miami.

Reason for the study was to

White-Rodgers Appoints Wolff European Manager

ST. LOUIS—The appointment of Walter S. Wolff as European regional manager has been announced by Russ



W. S. Wolff

Sherer of White-Rodgers Electric Co. Wolff will supervise the procurement of importers for the White-Rodgers line of automatic controls used in heating, refrigeration, and air conditioning.

He will be assisted by Harold R. Port whose title will be European district manager. Wolff and Port are now in Europe.

Karmazin Adds to Plant Third Time

WYANDOTTE, Mich. — A 19,000-sq. ft. addition to the Wyandotte, plant of Karmazin Products Corp. has been announced by John Karmazin, Sr., company president.

The new addition, the company's third in the past five years, “has been made necessary by the increasing demand for Karmazin air-cooled condensers used in refrigeration and home air conditioning units,” the announcement said.

Included in the expansion is the installation of modern, high production presses and a new General Electric roller hearth furnace. The new manufacturing facilities are expected to double Karmazin's present capacity.

Wolverine Names Davis To East-Central Region

DETROIT — Raymond B. Davis has been appointed Wolverine Tube's technical sales representative for the east-central section of the United States, according to J. H. Smith, east-central district sales manager.

Davis will coordinate his activities in the Cleveland area with Frank H. Grace & Co., manufacturer's representative for Wolverine in that locale.

Formerly technical office sales representative for five years in the Wolverine general sales office, Detroit, Davis will contact petroleum and chemical processing companies and heat exchanger manufacturers and fabricators.

determine whether the zero-

sorption point was consistently reproducible for silica gel, activated alumina, and anhydrous calcium sulphate (Drierite).

The zero-sorption point is defined as the one at which there is no further loss of weight when the desiccant is activated under specific conditions.

In the tests the samples were activated at both atmospheric pressure and under vacuum at a temperature of 401° F. In addition, desiccant samples were checked for “ignited weight” by heating to a temperature of 955° C., which treatment, however, causes the three desiccants mentioned to “lose their desiccating properties,” the authors stated.

As a result of their result, the authors arrived at the following conclusions:

“1. The zero-adsorption point

for silica gel is reproducible after repeated activation-water exposure cycles, either at atmospheric pressure or under vacuum.

“2. The zero-adsorption point for activated alumina is not reproducible after repeated activation-water exposure cycles, either at atmospheric pressure or under vacuum. This indicates the formation of a whole new phase.

“3. The zero-sorption point for anhydrous calcium sulphate is less reproducible than that of silica gel after repeated activation-water exposure cycles, either at atmospheric pressure or under vacuum.

“4. There is no significant difference in the reproducibility of the zero-sorption point for atmospheric activation as compared with vacuum activation, except for activated alumina.

“5. The zero-sorption point and the ignited weight point can be consistently reproduced.”

Irradiated Foods To Be Topic at Warehousemen's Meeting April 9-13

WASHINGTON, D. C. — A special session to discuss new developments in the field of foods irradiation will be held by The Refrigeration Research Foundation and the National Association of Refrigerated Warehouses during the 65th annual meeting of the American Warehousemen's Association.

The AWA meeting has been scheduled for April 9-13 at the Statler hotel in Los Angeles. A record attendance of more than 800 is expected.

This year the emphasis will be on informal discussions. One entire morning will be devoted to a “Brainstorm Session,” giving each individual a chance to air his particular problems.

Among the subjects tentatively being scheduled are legal liability insurance, saving tax

dollars, warehouse construction and modernization, costs, safety through color coding, and sales problems.

Meeting jointly will be AWA's two divisions—the NARW and the AWA Merchandise Div. Also, TRRF and NARW will hold the special session on foods irradiation.

A welcome party, sponsored by California warehousemen, will open convention festivities on Monday night, April 9. Highlighting AWA social activities, the president's reception and dinner will be held Thursday.

As a climax to the meeting, many convention delegates and their families will be taking either the post-convention air-cruise to Hawaii or the special AWA train trip through the Feather River Canyon.

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Proposed San Francisco Code--

(Concluded from Page 1)

articles on air conditioning and refrigeration. They follow the same separation used by the California State Contractors' Board to distinguish between air conditioning and refrigeration contractors.

The article governing air conditioning covers air temperatures 50° F. and above. The article on refrigeration covers air temperatures below 50° F.

PROPOSAL WOULD EXEMPT 'APPROVED' SYSTEMS

In addition to the exemption based on amount of refrigerant in self-contained units mentioned above, the proposed code would also exempt "approved" refrigeration systems of not more than 1 hp. containing Group 1 refrigerants and approved refrigeration systems of not more than 1/2 hp. containing Group 2 and Group 3 refrigerants, except for repairs.

It would exempt approved air conditioning system of not more than 5 hp. containing Group 1 refrigerants, except for repairs for which a permit is required.

Also excepted would be vehicles or vessels of public carriers or any other motor vehicles and manufacturers of air conditioning systems.

These exceptions, some local contractors believe, will make the code more workable than with the lower limits previously proposed. These would have required contractor's licenses for installing or repairing any self-contained refrigerating systems of more than 1 hp. and remote systems of more than 1/4 hp. without any reference to the amount of refrigerant they contained.

Similarly, it would have set the lower limit for air condition-

ing at 3 hp. for self-contained systems in one or two family dwellings and 1 hp. for both self-contained and remote systems in other locations.

A meeting between a committee of manufacturers' representatives and representatives of two refrigeration contractors' associations with Lester C. Bush, superintendent of the city's bureau of building inspection, resulted in raising the exceptions to their present levels.

PROPOSAL REQUIRES LICENSED CONTRACTOR FOR LARGER SYSTEMS

As they now read, the proposed revisions to San Francisco's building code require state contractor licenses for installation and service of refrigeration and air conditioning equipment larger than that spelled out in the exceptions listed above.

They permit the excepted equipment to be repaired or altered only by refrigeration or

air conditioning service shops registered with the department of public works.

To be registered by the city, a service shop must employ a man with at least five years' experience as a journeyman refrigeration mechanic and shall pass a test given by a newly-created Refrigeration and Air Conditioning Board.

The board will consist of five members appointed by the director of the city's department of public works.

They will include a qualified graduate engineer from an air conditioning or refrigeration equipment manufacturer, a qualified refrigeration contractor holding a C-38 state contractor's license or a qualified air conditioning contractor also engaged in the installation of warm air heating equipment and holding a valid C-20 state contractor's license, a qualified owner or operator of a refrigeration or air conditioning serv-

ice shop, a qualified refrigeration mechanic belonging to the Refrigeration Service Engineers Society, and a certified teacher with a college degree and administrative experience in the field of vocational training and adult education.

Installers and repairers of refrigeration and air conditioning equipment must first get a city permit to make the installation or repair.

For installation and initial inspection, a fee must be paid based on the horsepower of the unit or system being installed. Fees range from \$4 for units of 1 1/2 hp. or less to \$20 for systems of 16.5 to 25 hp. For systems larger than 25 hp., \$20 plus 25 cents for each additional 1 hp. is charged.

Fees for alterations and repairs are based on the complete cost of all materials, equipment, and labor. For jobs costing from \$100 to \$500 the fee is \$2.50. For each additional \$500 of cost an additional \$2.50 is charged until the fee reaches \$20. At this point an additional \$2.50 is charged for every \$1,000 of additional cost or fraction thereof.

After the installation passes its initial inspection, the city will issue the owner a permit to operate. After the initial installation of new equipment, the permit does not need to be renewed for five years. Then the permit must be renewed annually. Annual inspection fees will be made at half the rate of the initial inspection fees.

Frank Carryl, Brunner District Manager, Dies While Driving Car

OCALA, Fla. — Frank M. Carryl, district manager for Brunner Mfg. Co., died recently after apparently suffering a heart attack while driving his automobile in Belleview, Fla.

Carryl lost control of his car when stricken, according to Sheriff Dave Baillie. The car ran off the road and crashed into a tree, the sheriff said.

Carryl's only injury resulting from the wreck was a cut on the forehead. A physician said he probably had a heart attack.

Owner of the new River Cattle Ranch near Oklawaha, Fla., Carryl lived with his wife at their home north of Ocala on U. S. 441. He had been living in the Ocala area for the past two years, moving here from Tallahassee.

He was a member of the American Society of Refrigerating Engineers and other organizations.

In addition to his wife, Mrs. Margaret L. Carryl, he is survived by two sons, Frank M. Carryl, Jr., Atlanta, and Lawrence H. Carryl, Madison, Wis.; four grandchildren; and three brothers.

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CRMA Figures-

Table I—Combined Industry Shipments

Percentage Increase in 1955 over 1954 by quarters.

First Quarter	24.96%
Second Quarter	23.16%
Third Quarter	19.42%
Fourth Quarter	16.44%
Total Year	20.83%

Table II—Comparison of Commercial Refrigeration Shipments by Product, 1954:1955

Percentage of Increase or Decrease

A. Display cases—reg. temp.:	
1. Single duty, closed	14.8*
2. Double duty, closed	1.2†
3. Single duty, open SS	
4. Double duty, open SS	16.7*
5. Multiple Deck, open SS	23.6*
6. All other display	13.5†
7. Single duty vegetable, open SS	53.1*
8. Double duty vegetable, open SS	17.2*
9. Vegetable, closed	10.9†
B. Low temperature refs.:	
1. Open, self-service	42.5*
2. Upright freezers	36.5*
3. All other low temp.	13.5*
C. Dairy refs., wall boxes, etc.	5.8*
D. Reach-in refrigerators	9.4†
E. Walk-in coolers	33.9*
F. All other C-R products	7.7*
Net change	20.8*

(Concluded from Page 1)

cial refrigeration equipment in 1955 increased 20.83% over 1954. All but four out of 16 classifications of equipment showed increases for the year.

Open self-service single duty vegetable cases showed the greatest percentage increase with a rise of 53.1% in dollar volume. Shipments of open, self-service frozen food cases jumped 42.5%, upright freezers gained 36.5%, while all other types of low temperature equipment rose 13.5%.

Other big gainers for the year were walk-in coolers with a 33.9% increase in volume and multiple deck, self-service display cases operating at regular temperature with a rise of 23.6%.

The four categories showing declines in volume were double duty closed display cases (-1.2%), reach-in refrigerators (-9.4%), closed vegetable cases (-10.9%), and regular tempera-

Table III—1949:54 Ratios of Products to Total Commercial Refrigeration Shipments

Product	1949	1950	1951	1952	1953	1954
1. SD display cases, closed	7.3	5.4	3.4	2.8	3.5	2.8
2. DD display cases, closed	15.3	12.8	10.8	9.6	8.4	6.6
3. Total this class	22.6	18.2	14.2	12.4	11.9	9.4
4. SD display cases, open	8.2	12.3	12.6	14.2	14.5	6.2
5. DD display cases, open	17.6	17.0	17.7	14.2	14.2	10.1
6. Multiple deck cases, open						11.0
7. Total this class	25.8	29.3	30.3	28.4	23.7	27.3
8. All other display cases	1.6	.9	1.2	1.0	.6	.5
9. Total all above types	50.0	48.4	45.7	41.8	41.2	37.2
10. SD vegetable refs., open	9.0	13.2	13.3	13.6	11.4	4.7
11. DD vegetable refs., open						5.7
12. Vegetable refs., closed	.9	.7	.5	.8	2.2	2.2
13. Total this class	9.9	13.9	13.8	14.4	13.6	12.6
14. Low temperature refs., open	13.9	14.2	15.5	17.4	20.7	24.7
15. Low temperature refs., closed	.5	.4	1.0	.9	.6	.4
16. Total this class	14.4	14.6	16.5	18.3	21.3	25.1
17. Upright freezers						2.1
18. Dairy refs., wall boxes, etc.	3.8	2.1	1.9	2.4	2.3	2.4
19. Reach-in refrigerators	9.8	8.2	10.2	9.9	9.6	9.4
20. Walk-in coolers	6.5	7.2	6.3	5.4	5.4	6.3
21. All other C-R equipment	5.6	5.6	5.6	7.8	6.6	4.9
	100.0	100.0	100.0	100.0	100.0	100.0

the single or double duty, open or closed types.

Figures showing the ratio of sales of each category of product to total volume of commercial refrigeration products sold for the year, found low temperature refrigerators accounting for 29.5% of total volume with upright freezers adding another 2.4%.

Display cases accounted for 34.5% of total volume. Of this, open type self-service equipment provided 26.1% of the volume.

As compared with 1949, sales of low temperature cases, both open and closed types, have slightly more than doubled, in relation to total volume of commercial refrigeration equipment sold. This closely parallels the production of frozen foods, which also doubled in the same period, Sullivan noted.

Display cases have declined from 50% of total volume in 1949 to 34.5% last year. Multiple deck, open, self-service cases, which accounted for 11.2% of sales in the display case category, was the only type of case to show an increase in percentage of sales over 1954.

Vegetable refrigerators have gained from 9.9% of total sales in 1949 to 13.1% in 1955. While in 1949, almost all were of the single-duty open, self-service type, in 1955 total volume was split fairly evenly between the open single and double-duty

Table IV—Ratios of Products to Total Volume, 1949-1954:1955

	1949	1954	1955
1. SD display cases, closed	7.3	2.8	2.6
2. DD display cases, closed	15.3	6.6	5.4
3. Total, this classification	22.6	9.4	8.0
4. SD display cases, open SS	8.2	6.2	5.1
5. DD display cases, open SS	17.6	10.1	9.8
6. Multiple deck display cases, open SS		11.0	11.2
7. Total, this classification	25.8	27.3	26.1
8. All other display cases	1.6	.5	.4
9. Total, all above types	50.0	37.2	34.5
10. SD vegetable cases, open SS	9.0	4.7	5.9
11. DD vegetable cases, open SS		5.7	5.5
12. Vegetable refrigerators, closed	.9	2.2	1.7
13. Total, this classification	9.9	12.6	13.1
14. Low temperature refrigerators, open SS	13.9	24.7	29.1
15. Low temperature refrigerators, closed	.5	.4	.4
16. Total, this classification	14.4	25.1	29.5
17. Upright freezers		2.1	2.4
18. Dairy refrigerators, wall boxes, etc.	3.8	2.4	2.2
19. Reach-in refrigerators	9.8	9.4	6.9
20. Walk-in coolers	6.5	6.3	7.0
21. All other C-R equipment	5.6	4.4	4.4
	100.0	100.0	100.0

NOTE: Government contract shipments excluded from all totals.

to one during the last year.

In studying the accompanying table of comparison between years, it should be remembered that the percentages indicate comparative share of the market and not gains or declines in

the over-all sales volume.

As the total market grows over the years, a particular category of product might show steady increases in sales volume but still capture a declining share of the market each year.



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They'll
Do It
Every
Time

by

Jimmy
Hatlo

**All-Industry Exposition In Detroit?**

Our All-Industry Exposition soon will have three great new site possibilities—New York City, Chicago, AND DETROIT.

New York City's \$22 million Coliseum, on Columbus Circle near the southwest corner of Central Park, is scheduled to open this year. While Detroit will not finish its \$24 million convention hall until 1959, it will still be ahead of Chicago. The Central City won't get its new convention building under way until 1958. Incidentally, "City Fathers" in Chicago may have to revise cost figures and locations several times before breaking ground, just as Detroit did.

Back to Detroit: our contemplated Exhibition Hall will provide 400,000 sq. ft. of exhibits space, Chicago will provide 360,000, and New York City, 301,000.

Detroit also will provide more parking spaces for auto-driving conventioners—3,775. Chicago will have room for 2,600, and New York City only 850 in its forthcoming Convention Hall.

In Chicago, the newly-created Metropolitan Fair and Exposition Authority plans to build on the lake front site of the 1933-34 World's Fair. Legal complications, however, stall an early construction date. The Coliseum Exhibition Corp. has leased and will operate the New York City building, compared to public operation in Detroit and Chicago.

Memorial Hall Commission will be landlord for the wondrously promising Detroit Convention Hall. It already operates the Veterans Memorial Building, and will open the Henry and Edsel Ford Auditorium soon after Aug. 1, of this year.

Detroit, as you may remember, inaugurated to the first all-industry exposition. Since then the exposition has outgrown the city.

By 1959, we hope, we can play host in magnificent style to the greatest Refrigeration and Air Conditioning Exposition of all time.

Recognize Anyone on This List?

Business executives often can be classified within five categories, declares Frank E. Fehlman, management consultant (with tongue in cheek, of course). He lists those categories as follows:

1. *Bismarck type*—gruff, sarcastic, thinks he knows the answers to any and all questions. Only way to win his attention is to listen. He loves to talk; tries to dominate every conversation. Frequently doesn't know what he's talking about.

2. *Ben Franklin type*—never raises his voice and seldom buys or agrees to any proposition until he has studied it carefully. This fellow lasts a long time.

3. *Eisenhower type*—wants things cheerful, avoids controversies, and often is criticized unjustly because he loves peace and cooperation. But business thrives.

4. *Woman's intuition type*—won't decide until he has discussed a problem with his wife, mother, or girl friend. Subject to sudden whims of his own.

5. *Flipped-coin type*—will try anything if there's a remote hope for a fast buck. Eventually loses his shirt.

There are other types, no doubt. Contributions from subscribers will be welcomed in the interest of "livening up" the editorial page.



7 East 42nd St.
New York 17, N. Y.

Editor:

I have just arrived back in New York to learn that I have missed out on the Recognition Banquet which was recently staged in your behalf. It certainly would have been nice to be among those present and help add my small contribution for the perfectly wonderful job you have done for our industry over these many years.

I have followed the NEWS religiously since 1933 and here is wishing you 25 more years of continued success and happiness.

GEORGE W. MEEK

Route 13
Kirkwood 22, Mo.

Editor:

I am bored with the overdone promotion of such things as window units, home freezers, auto air conditioning, etc.

I consider this junk a discredit and disgrace to the trade. They are sold through every hock shop, filling station, loan company, second hand store, clothing store, coal company, scrap iron dealer, and so on or, they have a friend that can get you one wholesale.

The smart sucker is then told to get the janitor or some handy man to put it in the window and just plug it in, when it don't work for one of the various reasons they call the serviceman when he goes out and tells them what is necessary some of these people have the guts to ask you to tell or show the janitor what to do, some of them want you to come in the evening or certain hour of the day or night so their friend or relative can learn, "he is learning to be an engineer."

I consider 99% of these applications impractical, unnecessary and a disgrace to the trade. In short the ten dollar millionaire type of clientele you sponsor is plainly a "Damn nuisance" and a waste of time.

I intend to continue legitimate refrigeration and air conditioning and pass up the phonies.

E. E. BURKE

P.S.

Don't laugh at the enclosed queer picture from Japan, they have nothing on us. Our architecture is graced with just as wierd engineering designs progressing backwards faster than their window units, and wait until our screwball fertilizer spreading engineers hypnotize the suckers into buying heat pumps.

(Editor's Note: The writer enclosed a clipping showing a Japanese building with a large number of grotesque stove pipes running up the side. This is a prevalent sight in that part of the world where central heating is not so well known as in America.)

East Hill Rd.
Marcellus, N. Y.

Dear George:

I am reading your "Inside Dope" with continued interest and uninterrupted pleasure.

"Lose Weight Boy!" in a February "Dope" gave me an extra laugh. Perhaps because it reminded me of a similar incident. It goes like this:

"A lady, standing in a crowded bus, inadvertently dropped her expensive handkerchief onto the lap of an individual sitting in front of her (apparently not a gentleman and surely not a sales executive). It happened that his flap was unzipped.

"A fellow in the seat next to him, noticing it, turned around and in a confidential whisper said: 'Sir, your slip is showing!'", whereupon our friend in panic hurriedly tucked the embroidered linen away and, zipping up his pantaloons, buried a red face behind his newspaper."

Now, how do you unzip this snarl?

PAUL G. HEGENT

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Tests Show Hogs Fatten Quicker, Chickens Lay Better, Cattle Produce More Milk at 60-65° F.

ATLANTIC CITY, N. J.—The condition and productivity of just about every type of food-producing domestic animal can be improved by air conditioning in some form, it was brought out in the "new fields for mechanical cooling" conference held at the annual meeting of the American Society of Refrigerating Engineers.

Hogs would probably be benefited most by air conditioning, it was pointed out in the discussions. There are some installations of air conditioning already in use among hog raisers.

Here are some of the main points relative to the effect of temperature on hogs:

Ideal temperature for half-grown hogs is 70° F.; for full grown hogs it is 60-65° F.

Ideal growing time for hogs is the summer time, but it is then that climatic conditions are at the worst.

At 91° F. it may take as much as 4 times as much feed to produce one pound of gain in a hog as at 60-65° F.

Some Form of Cooling Upped Food Intake

Tests reveal that some form of cooling upped food intake and reduced rectal temperatures. There is also evidence that fertility is related to environmental conditions. It has been shown that conception rates are at the highest in the northern California area because of the climatic conditions.

So far as chickens are concerned, the following is the summation of the discussion by W. O. Wilson of the Department of Poultry Husbandry, University of California, on the effects of various temperatures on laying hens:

- 55° F. best egg production.
- 70° F. thinner egg shells, smaller eggs.
- 80° F. panting starts, increase in body temperature.
- 90° F. egg production decreases.
- 95° F. fertility and hatchability decrease.
- 100° F. some hens die.

Questioned as to the comparative values of cool drinking water for hens vs. "bobbing," Prof. Wilson said, "in summer all tricks of the trade should be used to keep hens cool."

Is it practical to air condition poultry houses?

"We haven't tried mechanical refrigeration on a large scale," Prof. Wilson admitted, "but my own opinion is that evaporative coolers would work satisfactorily. Perhaps mechanical refrigeration can be used on a practical basis, but that remains for the future to tell us."

Chickens Not Affected By Relative Humidity

Questioned as to the effect of relative humidity on chickens, Prof. Wilson explained, "chickens don't sweat so they aren't much affected by relative humidity. The only problem of high relative humidity is the odor problem."

European types of cattle react sharply to rising ambient tem-

peratures at 75° to 80° F., according to Dr. Samuel Brody of the University of Missouri.

There is an abrupt rise in rectal temperature, and abrupt and steep declines in feed consumption, milk production, body weight, thyroid activity, heat production, blood cholesterol level, carbon dioxide combining power, and a change in milk composition, he said.

Indian cows can stand the heat much better, there being no sharp drop in their milk production.

"However, the Brahmins don't give much milk anyway," he commented.

Dr. Brody also pointed out that European cattle are like arctic animals in that they are

tolerant to cold weather.

"They can reduce their body temperature to just above freezing. This reduces the temperature gradient and thus the body heat loss," he explained.

"Actually, cattle don't need heating, so why build warm barns. The problem, rather, is to keep them cool in summer, and this applies to all ruminants," said Dr. Brody.

Refrigeration Problem Important One

Problem of refrigeration, he added, "is a very important one."

Much of Dr. Brody's talk was devoted to adaptations made by cattle and other ruminants to dissipate body heat, including such things as longer ears.

"One method of cooling, of course, is panting, but I'm not sure," he commented, "whether panting helps much because of the work involved."

Air Conditioning Vent Camouflaged In Linoleum Firm

LINCOLN, Neb.—The problem of camouflaging an air conditioning vent in a selling area has been happily solved by the Arthur Griswold Linoleum & Tile Co. here. At the same time a drab wall space has been converted into an effective display.

The vent is located high on the back wall of a 25 by 100-ft. sales floor devoted to display of linoleum and tile.

A 5-ton Chrysler Airtemp air conditioning unit was installed in the basement. Ductwork to the sales floor handles both the cooling and the warm air from a gas furnace. Both units are synchronized for year-round air conditioning.

Since the store has a high ceiling, the vent stood out like



LINOLEUM decorating wall space around air conditioning vent in Griswold Linoleum & Tile Co., Lincoln, Neb.

the proverbial "sore thumb" on the wall.

Remnants from various linoleum rolls were used to form 3-ft. tubes. These were mounted at a slight angle on the upper section of the wall, framing the air conditioning vent.

CONCEAL-X

THE NEW AIR CONDITIONING UNIT THAT REQUIRES NO FLOOR SPACE



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'Short, Short' Course In Air Conditioning Fundamentals-2

Air Flow Factors Are Essential to Proper Design of Successful Duct Systems

"In general, there are two types of ducts the round and the square or rectangular. The round duct has two advantages over the rectangular. First, the round duct requires less material and is, therefore, cheaper to fabricate. Second, the round duct is more efficient by being able to handle more air with less area of duct work.

"In spite of the fact that rectangular ducts have these disadvantages, they are used more often due to the fact that in modern construction of buildings they can be concealed in available spaces and provide for a better appearance.

"A successful duct system is one which has been designed

around several interdependent factors concerning the flow of air. These are:

"1. The friction or resistance to the flow of air caused by its contact with the walls of the ducts.

"2. The velocity or rate of flow of the air through the ducts.

"3. The pressure behind the air which drives it through the ducts.

"4. The volume or quantity of air being handled through the ducts.

"In many respects, the flow of air through a duct system is similar to the flow of water through a pipe. Water pipes offer a resistance to the flow of

water and ducts resist the flow of air.

"In either case, friction plays a big part. In handling air, the frictional loss has a direct relation to the length and perimeter of the duct, the number of elbows, and the inside surface of the duct. Frictional loss also occurs in the cooling unit, heating coils, and filters.

"The length and perimeter are important factors due to the fact that their product represents surface area against which the air must rub. The greater the area, the greater the friction.

"Elbows offer resistance to the air flow in two ways. The friction caused by the surface area and also by eddy currents of air which are produced in the elbows. Eddy currents produce what is known as dynamic loss. Dynamic loss also occurs at the

D. C. Schaffer, training supervisor for the service department at Frigidaire Div., General Motors Corp., presented an excellent outline of the basic fundamentals of comfort air conditioning at the national convention of the Refrigeration Service Engineers Society last November. He explained for the benefit of servicemen and others who are not engineers just what air conditioning is all about and how it works.

A condensed version of his outline is being presented serially by the NEWS. In the first instalment last week, Schaffer told about the nature of air and moisture, explained the psychrometric chart and how to use it, and described air movement and the various types of fans.

entrances and exits of the ducts.

"Velocity or the rate of flow is closely associated with friction, pressure, and volume. The length and perimeter of the duct, the number of elbows, and the inside surface of the duct not only produce friction, but also affect the velocity.

"The larger the area of the

duct and the fewer elbows, the less the velocity as long as the other factors remain constant. The permissible velocity of air through depends largely upon the application. For comfort conditioning, where drafts and noise must be considered, the velocity must be maintained at a lower rate than that permissible in most industrial applications.

"Both factors of friction and velocity are closely associated with pressure because the flow of air is under the influence of two distinct pressures, resistance and velocity.

"The resistance pressure is that which is required to overcome the resistance offered to the flow of air. The velocity pressure or head is that which is required to create the velocity or to accelerate the mass of air from rest to its final velocity. The sum of these two pressures is the total pressure and it must be available at the fan.

"The amount of air to be handled depends upon several things including the total amount of heat that must be removed from the conditioned area in the summer time or added in the winter time.

How Much Air?

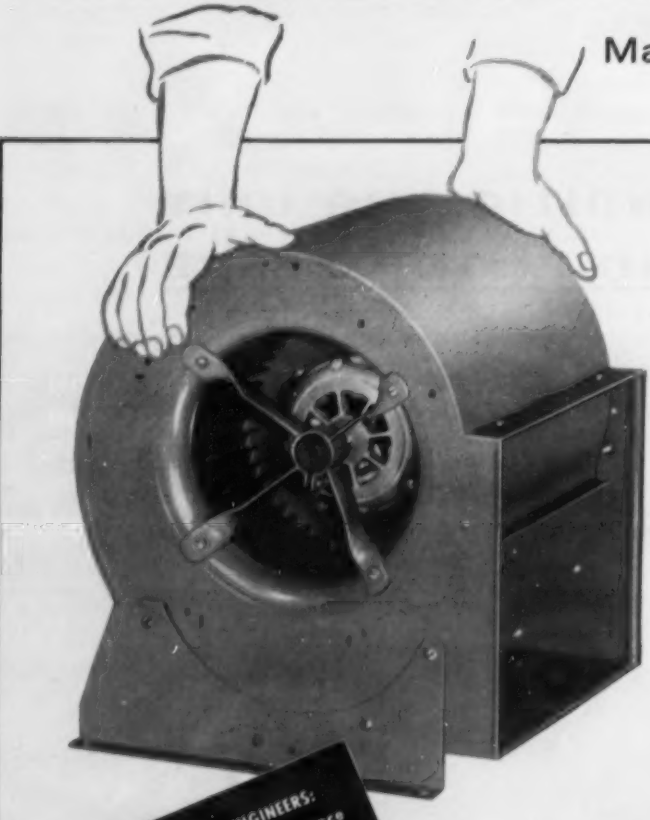
"The amount of fresh air to be brought in from the outside and the number of air changes that are required also affects the volume. Other items such as duct losses in the form of heat transfer, actual leaking of air, ceiling heights, and method of distribution must often be considered.

"In comfort air conditioning the proper distribution of conditioned air within a space is of utmost importance. It is one of the principal yardsticks by which a successful installation is measured.

"The refrigeration system or the heating system may be of the proper size and operating perfectly, the fan may be delivering the calculated amount of air to a well designed duct system, yet if the method of distributing the conditioned air in the space is poorly conceived, the installation will be a failure.

"The goal of good distribution is to create air movement in all

(Continued on next page)



Makes modern, compact designs still more practical

THE NEW
Brundage
POWER-CENTER BLOWER

TEST AND DEVELOPMENT ENGINEERS:
Because of its different performance characteristics, this unit opens new design possibilities. We suggest that you avail yourself of Brundage test data in the early stages of your development program.

The demand for more compact equipment—and ever-higher performance—calls for maximum blower output under increasing static pressures.

The Brundage Power-Center Blower fits this need to a "T."

Using the new Iron Fireman-developed motor, the Brundage Power-Center Blower eliminates the space—and the cost—required for externally mounted motors, belts, and drives. And test results show that the Power-Center maintains efficiency in the highest static pressure ranges.

Along with these design advantages, the Power-Center affords a new measure of durability. With a rubber cushioned shaft supported on both ends, and sealed ball bearings, it will run quiet and true. It will add to your products' reputation.

Presently available in limited test quantities, the Power-Center will be in full production soon. Now is the time to schedule your test and development program.

MOTOR AND WHEEL are integrally joined, can't work loose. You're assured of full efficiency and quiet operation for customer satisfaction.



UNIVERSAL MOUNTING gives you the greatest design freedom. Each blower is readily installed in any standard discharge position.



TEST BLOWERS are being supplied as motors become available. Brundage engineers will gladly assist you in test and development work.



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looking for
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refrigerator
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Then see how the New Inland
Ice Slice Trays give refrigerators
that added buy-urge!

Ever notice how a housewife smiles with delight as a sales person displays the colorful Inland Ice Trays in your refrigerator? Trays with color and sparkle . . . with the new sized ice slices . . . to be found in no other. The ladies see them—and they **want them!**

Ever watch the **man** of the house in the same situation? He gives the "buy sign" to the Mrs. This refrigerator—**your** refrigerator—just sold itself! So, be sure your new refrigerators are fully equipped with nationally advertised Inland Ice Slice Trays.



LOOK!
Ice Slices

from this New
Inland Tray!



**Sized just right to
cool drinks faster; to
chill salads,
appetizers, desserts!**

Here it is! The New Inland Tray that gives ice slices shaped just right for cooling drinks faster . . . chilling appetizers, salads and desserts in double-quick time . . . and for easy crushing. Just flip the "Magic Touch" lever and every one of these glittering ice slices is freed and ready for use.

Replace those worn out trays in your present refrigerator with smart, new Inland "Magic Touch" Trays. They come in 4 gay colors, gold, blue, bronze and natural aluminum—one just right for you . . . at your dealer's.

Be sure your new refrigerator is equipped with Inland "Magic Touch" Ice Slice Trays. Ask your dealer for them.



INLAND "Magic Touch"
ICE SLICE TRAY



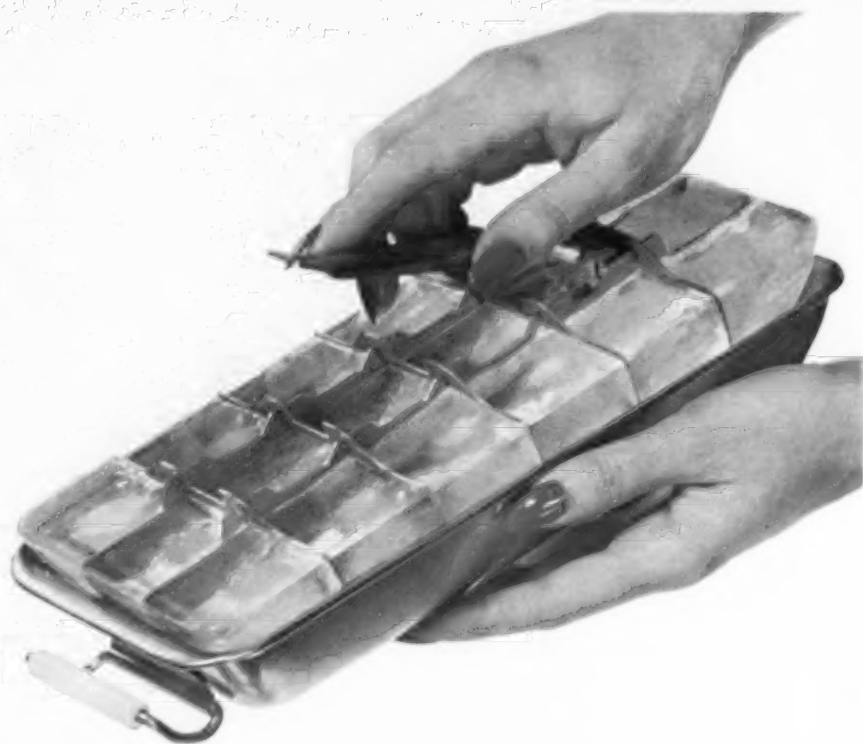
INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio



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Wonderful drinks are
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with new-sized cubes from the
“Magic Touch”
INLAND
ICE CUBE TRAY

An easy flip of the “Magic Touch” lever on this beautiful Inland Ice Cube Tray and you have three full rows of sparkling ice cubes—instantly freed and ready for use. They're in the new, faster-cooling size, too, designed to fit any glass. So, if you'd like the very latest in ice tray convenience, replace those worn out trays in your

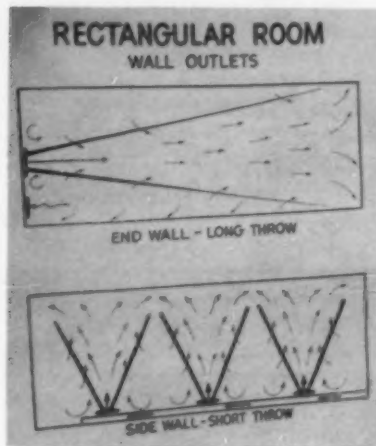
present refrigerator with smart, new Inland Trays. They come in 4 gay colors, gold, bronze, blue and natural aluminum—one just right for you... at your dealer's.

Be sure your new refrigerator is equipped with Inland “Magic Touch” Trays. Ask your dealer for them.



INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio

How To Distribute Air--



USE OF WALL OUTLETS in a rectangular room can mean long throw from one end or short throw from side walls. Or outlets at each end would obtain same results with lower velocity.

(Continued from preceding page)

parts of the room, without drafts, hot spots, cold spots, and with a minimum of noise.

"The modern method is to use smaller quantities of supply air introduced into larger quantities of room air at high initial velocity from outlets placed above the heads of the occupants. In this manner, the supply air loses its velocity by mixing with the room air before descending to the breathing line.

"To make it possible for the smaller amount of supply air to remove the required amount of heat and moisture from the room, it must be delivered at a relatively low temperature. With improper air distribution this would produce discomfort.

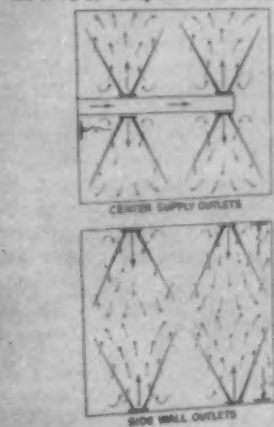
"However, with the proper distribution not only does the supply air mix with the room air with an interchange of velocity, it also causes an interchange of heat before it drops to the breathing line.

"For successful air distribution in cooling and dehumidifying installations the following factors should be observed.

"The main stream of air from the outlets should be directed towards sources of greatest heat such as large expanse of window area, sun-exposed outside wall, a concentration of occupants, or other internal heat source. In this manner such heat can be picked up before its effect is felt in other parts of the conditioned space.

"The air should enter room at high velocity. The velocity at

LARGE SQUARE ROOM



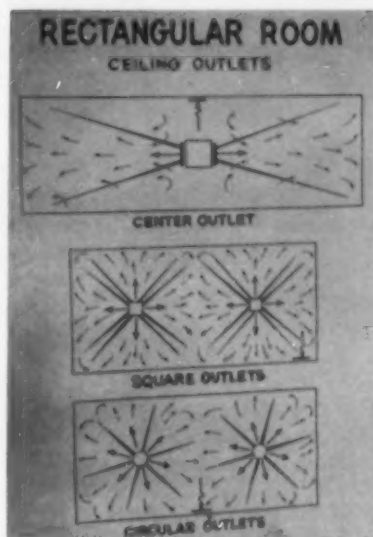
IN LARGE SQUARE ROOM, supply air can be projected from duct across center of room with air leaving outlets facing in opposite directions. Or outlets can be placed in opposite side walls throwing air toward center of room.

which the air leaves the outlet depends upon several factors such as the type and location of grille, the size of outlet, the distance or throw of air required.

"In general, with the same volume of air being handled, the further the throw required, the smaller the outlet should be and the higher the outlet velocity will be. Outlet velocities will vary from 500 to 2,000 f.p.m.

"We have already brought out the importance of maintaining a room velocity not exceeding 40 to 50 f.p.m. The air should be projected so it will blanket the entire room and strike the walls with a velocity lower than 50 f.p.m.

"When two or more grilles are located on the same wall, their air streams should not cross until the air has traveled at least two thirds of the throw. Otherwise, air turbulences may prevent proper distribution to all parts of the room. Also the



THREE TYPICAL CEILING OUTLETS in rectangular room shows (top) air projected in opposite directions from center, (middle) air projected at relatively low velocity from two or more square outlets in four directions, and (bottom) air projected in all directions from circular outlets.

velocity of both streams may be destroyed.

"In wide rooms where outlets are located in opposite walls, the air streams should not meet at a velocity exceeding 20 f.p.m. Otherwise the resulting down drafts produced will cause cold air to fall upon the heads of the occupants."

Location of the outlets is also important, Schaffer emphasized. In a long rectangular room, a wall outlet at one end of the room would require a long throw. Outlets at both ends or two or more outlets on the same side wall would permit a short throw with larger outlets and lower velocities.

When ceiling outlets are used in square rooms, they should be located so that the air blankets the entire space and drafts should be avoided through collision of air stream with each other and with walls or obstructions.

(To Be Continued)

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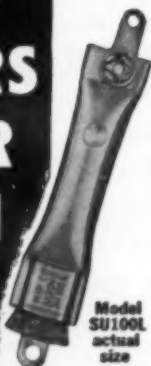


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HEATING • AIR CONDITIONING FOR HOMES, BUSINESS, INDUSTRY

For more information about products advertised on this page use Information Center, page 16.

What's New



Schaefer Introduces 2 Ice Cream Merchandisers

—KEY NO. F-330—

MINNEAPOLIS—Two new automatic defrost ice cream merchandising cabinets have been announced by Schaefer, Inc.

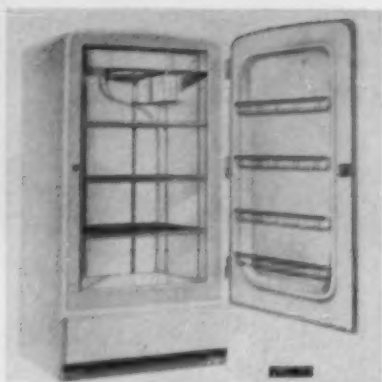
Known as model GFS-99 and GFS-122, the new cabinets "embody many features designed to appeal to ice cream manufacturers and retailers who want a small size defrost cabinet that can readily and easily be moved about in the store," it was pointed out.

Model GFS-99 has 9.9-cu. ft. capacity, and accommodates 504 pint ice cream packages. Model GFS-122 has 12.2-cu. ft. capacity, and accommodate 672 pints.

Both models have copper tubing attached continuously to the four sides and bottom of the evaporator tank, and are equipped with the new Schaefer "Free-Air-Flow" condenser.

On the under side of the Schaefer low-type, fluorescent-lighted superstructure is a "super defrost coil that keeps a blanket of cold air over the product at all times," it was stated. "Defrosting is automatic and on a short cycle."

Both models have a 12-in. top opening and new fold-down night cover as standard equipment.



19 Cu. Ft. Commercial Reach-In Announced

—KEY NO. F-332—

HAGERSTOWN, Md.—Victor Products Corp. has announced a new heavy-duty commercial reach-in refrigerator of 19-cu. ft. capacity that occupies less than one square yard of floor space.

It has three adjustable steel wire shelves plus four utility racks on the inside door panel.

The refrigerator is heavily insulated and rugged in construction, according to the company. Exterior is of high temperature baked white enamel and the interior of smooth aluminum "that is easy to clean."

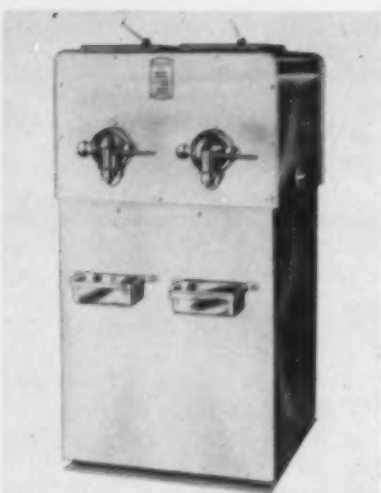
The reach-in has a hermetically-sealed unit and is self-defrosting. In addition to hotel and restaurant kitchen use, it is ideal for use in bars, taverns, and retail liquor stores for cooling beverages, Victor stated.

2-Flavor Ice Cream Dispenser Designed

—KEY NO. F-333—

CHICAGO—Freez-King, Inc. here, in announcing improvements in its freezer line for 1956, said that heading the new line is a double unit ice cream freezer which dispenses two flavors—chocolate and vanilla—from the machine at the same time.

The two dispensing units operate independently of each other. The freezer is 31 in. wide, 33 in. deep, and 62 in. high. It is made of stainless steel "which is easier



to operate than former models." Another Freezer-King development is the new "Three-In-One" carbonated drink dispenser. It contains three draft arms in addition to the conventional carbonated water dispenser.

The Three-In-One dispenser is 18 in. wide, 18 in. deep, and 42 in. high. A stainless steel cabinet covers the frame.

This unit contains a cooling coil for carbonated water which produces 13.2 gals. of carbonated water per hour, according to the company. There are three 2-gal. syrup jars in each installation.

Dehumidifier Control Works Once Each Hour

—KEY NO. F-334—

MILWAUKEE—Recently introduced by Miller-Harris Instrument Co. here was model 5D dehumidifier control.

Designed to maintain constant humidity levels automatically, the unit turns an electric dehumidifier "on" and "off" once each hour, removing humidity as it accumulates.

The control can be plugged into any electrical outlet and the dehumidifier plugged into the control. Setting the dial pointer determines the number of minutes each hour the dehumidifier is to run.

Detroit Controls Valves Mix Hot, Cold Water

—KEY NO. F-335—

DETROIT—Two water mixing valves, the Detroit No. VD-203 (adjustable) and the No. VD-205,



which automatically control hot water temperatures at the fixtures by mixing hot and cold water in the proper proportions, are manufactured by Detroit Controls Corp. here.

The manufacturer says the valves will thus reduce water heating costs, and also eliminate sweating of water closet tanks by replacing cold water with tempered water.

The adjustable VD-203 is available in two ranges: 70F to 130F or 120F to 160F. The non-adjustable VD-205 is factory set.

to transform the sidewall unit into a streamlined, air-tight baseboard installation."

The hot air registers vary in size from 8 by 4 to 14 by 6 in. The cold air intake grilles are sized from 8 by 4 to 30 by 8 in. and the baseboard frames from 8 by 6 to 14 by 6 in.

Most Kalamazoo registers and grilles come with standard horizontal fins. Vertical fins are optional.



John E. Mitchell Adds Auto Dash Conditioner

—KEY NO. F-337—

DALLAS—Addition of a new dash model in the Mark IV refrigerated automotive air conditioner line was announced recently by John E. Mitchell Co. here.

Said to approach the cooling and air moving capacity of the firm's larger trunk model, the under-dash unit has cooling coils housed in a Fiberglass case with louvers that allow direction of air to any part of the car.

Available to fit nearly all late model automobiles including station wagons and convertibles, the air conditioner comes in 6 and 12-volt versions, according to the company.

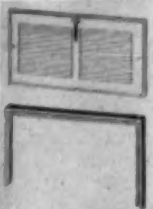
Kalamazoo Produces Register, Grille Line

—KEY NO. F-336—

KALAMAZOO, Mich.—Kalamazoo Furnace & Appliance Mfg. Co. here is now manufacturing a new line of registers and grilles for heating and air conditioning.

The company said the line "has been designed to save time and inventory space. One unit is applicable for two operations."

"With the introduction of the new 'E' Frame it is now possible



Calibrated Devil Level Offered by Pickett

—KEY NO. F-331—

ALHAMBRA, Calif.—A dial calibrated devil level with semi-floating needle principle which measures degrees off level or plumb and verticals, horizontals, angles, slopes, and pitches was introduced here recently by Pickett Products, Inc.

TAME TOUGH Refrigeration PROBLEMS with "JOB TAILORED"



MANY SHAPES
MANY SIZES
MANY METALS

DEAN COLD PLATES

SAVE money with DEAN "job tailored" cold plates...made exactly in the size you need—in zinc metalized steel, stainless steel and other metals—in cylinders, U's, angles, tanks, etc. Also in plates for baudelot-type coolers.



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For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised

(list name, page, and issue date)

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450 W. FORT ST. DETROIT 26, MICHIGAN

Oil-Fired Winter Home Conditioner Offered

—KEY NO. F-338—

COLUMBUS, Ohio—A complete line of fully-automatic oil-fired residential winter air conditioners was recently put into production by Janitrol Heating & Air Conditioning Div., Surface Combustion Corp.

Included in the line are Low-Boy, High-Boy, and Counterflow models, each in three sizes—85,000, 102,000, and 135,000 B.t.u./hr. output at bonnet, the company said. These units may be converted to gas fuel with an AGA listed model JH Janitrol gas conversion burner.

Janitrol "Heating Heart" includes the combustion chamber and heat radiator assembly which feature 14-gauge all-welded steel construction for fast heat transfer. There are no bolted or gasketed joints which protect the unit from leakage. A refractory lining muffles noises of combustion and diffuses heat uniformly, the manufacturer said.

"Jet-omizer" high-pressure burner provides atomization, the firm claims, blower and motor "float" on rubber cushions.



CORRECTION

—KEY NO. X-2316—

In the publishing business, like all businesses, we have our ups and downs. But sometimes we get our ups down and our downs up and when we do it makes us feel mighty low, and down in the dumps.

Such was the case in the Feb. 20 issue in which we ran the above picture with the down side up and the up side down.

The subject is a space-saving "Slim-Line" mullion unit by Tenney Engineering, Inc. These streamlined coolers with two-way air flow system (standard on two motored models) distribute air at safe temperature, the company reports. Directional louvers control low velocity air movement at the outlet. Mounting hangers alternate for either top or back wall mount.



**Increase
COOLING TOWER
EFFICIENCY
With
ASPIR-JET**

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure. Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

• Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: If you are not now using or stocking this astounding new product, wire or write

THERMAL AGENCY

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Adjustable Interior Reach-In Introduced

—KEY NO. F-339—

PLYMOUTH MEETING, Pa.—"Vimco" model RS-40-S reach-in refrigerator with interchangeable interiors adjustable on 1-in. centers for any combination of bakers pan slides, meat rails, shelves, or refrigerated drawers was recently announced by Victory Metal Mfg. Corp. here.

Interior accessories need no

tools to be changed quickly, according to the firm. Use of ball-bearing pull-out shelves permits access to items stored in the rear. The unit is automatically self-defrosting.

Compressor slides out for servicing in the 40-cu. ft. capacity, coved corner, all-metal, five-shelf unit.

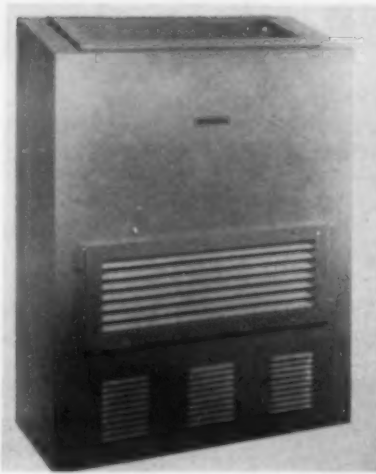
Electromode Produces Heater-Ventilator

—KEY NO. F-3310—

ROCHESTER, N. Y.—A new all-electric heater-ventilator unit for applications requiring fixed quantities of outside air for ventilation at certain periods has been introduced by the Electromode Div. of Commercial Controls Corp.

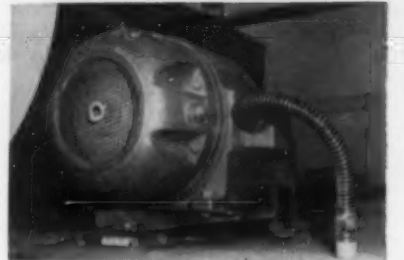
The new unit is designed for those locations where, in addition to application of heat to maintain desired inside temperature, a positive introduction of outside air for ventilation purposes is required at some times.

The design permits economical operation as a gravity heater,



without motor operation, when no ventilation is required. It also affords circulation of a fixed quantity of filtered tempered outside air for ventilation when desired.

Air is circulated by a double squirrel cage blower with little variation in outside air quantity under extremes of dirt loading of the filter according to Robert Boyd, development engineer, of the unit.



Murray Motor Base Takes Up Belt Stretch

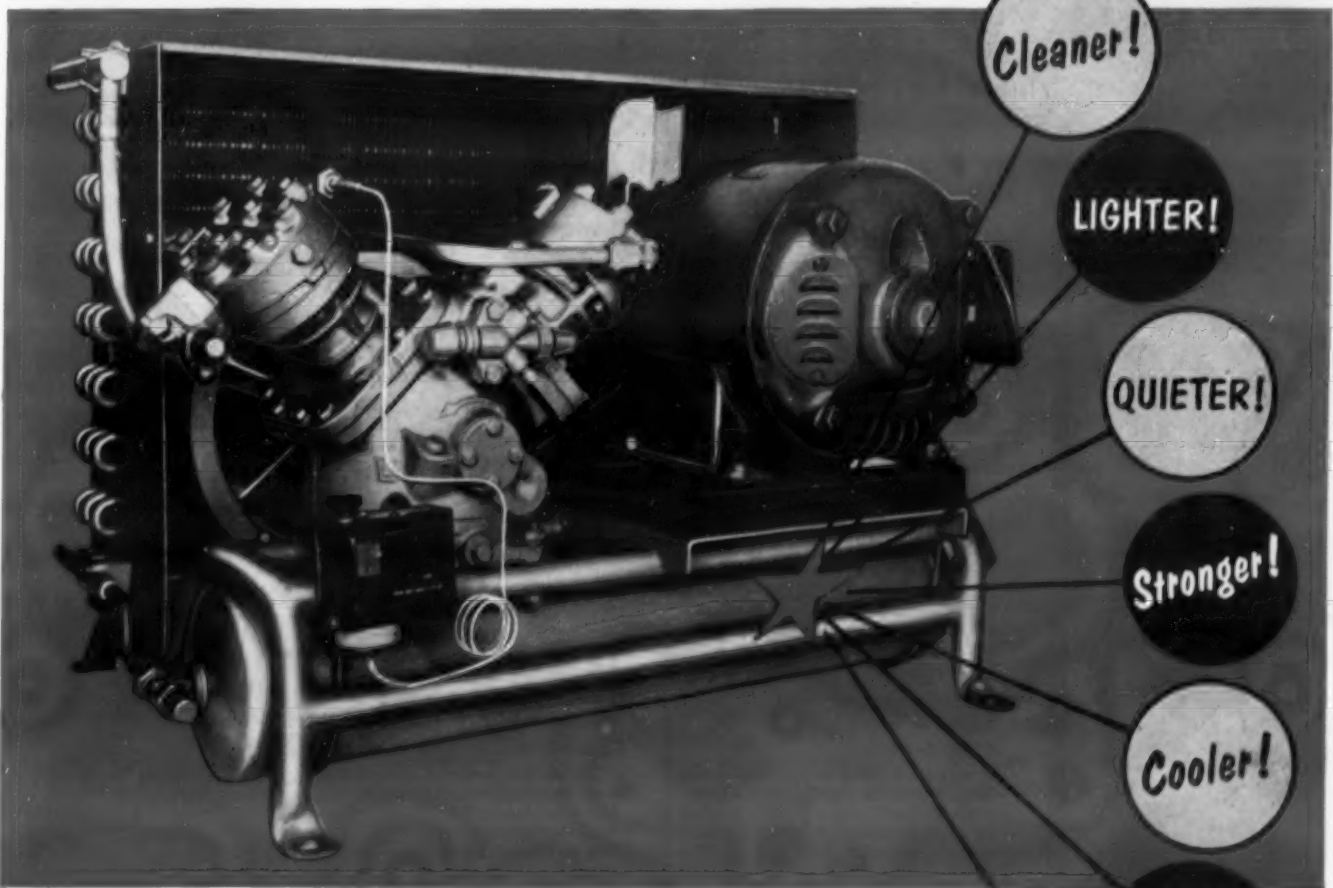
—KEY NO. F-3311—

DETROIT—A new motor base which automatically takes up belt stretch and absorbs starting loads was introduced here recently by Murray Equipment Co., Inc.

Designed for remote installation with critical equipment, the base reduces belt changing time, eliminates motor or belt realignment, and automatically adjusts new belts to proper tension.

Called No. 500 "Tens-A-Matic," the base is available for motors of all sizes from fractional to 200 hp.

NOW...FROM KELVINATOR! IMPROVED CONDENSING UNITS WITH NEW TUBULAR BASES



Cleaner!

LIGHTER!

QUIETER!

Stronger!

Cooler!

EASIER
To Handle!

Easier
to Service!

Here is a tremendous new improvement in Kelvinator open-type condensing units! New tubular-type bases give you many *plus* benefits that now make Kelvinator, more than ever before, *your best buy*. Look at the heavy-duty construction of the Model OA-100 pictured above... check again the *extra value* features you get with Kelvinator's improved tubular-base models.

Kelvinator offers you a complete line of precision-built air-cooled, water-cooled, combination, and truck-type condensing units... hermetically sealed condensing units... and hermetic compressors for household and commercial cabinet use.

See your Kelvinator wholesaler, or write Kelvinator Division, American Motors Corporation, Detroit 32, Michigan.

Kelvinator

Division of American Motors Corp., Detroit 32, Mich.

SPECIALISTS IN REFRIGERATION SINCE 1914

For more information about products advertised on this page use Information Center, page 16.

Sell Wives on Product, Husband's Status To Increase Commercial Sales

ATLANTIC CITY, N. J.—What would you think of a company where a salesman had two supervisors—one supervisor had 15 to 45 minutes a week contact with the salesman and the other supervisor had from 15 to 50 hours a week with him? Suppose a company devoted all its research, manuals, con-

ferences, and incentive on the supervisor who spent the 15 minutes with the salesman and nothing on the supervisor who spent the 15 hours.

It wouldn't make much sense, would it?

And yet, says Phyllis A. Brown, editor of the Research Institute of America, that is

what is happening when a company does not tap the tremendous potential of the wife's influence over a salesman.

She reported to the National Commercial Refrigerator Sales Association at its convention here recently on what the institute learned from an exhaustive survey of leading companies and

some 15,000 salesmen's wives.

"Would it amaze you," she asked, "to find out that 75% of all companies contacted, while admitting they were aware of the tremendous opportunity if they were to enlist the full support of the wife, have done little or nothing about it?"

"Would it surprise you to learn that some of the chronic gripes of wives about selling cover the same subjects that your salesmen gripe about?"

"Would it concern you to discover that some of the things you attempt to sell in your sales bulletins are the very things that the wife, not believing, in tries to 'unsell' at home?"

"Would it interest you to find out that the average convention or sales meeting that wives have attended does not furnish what the wives say they want out of

such gatherings as these?"

"Would it surprise you to find out that 86% of the women want more information about their husband's business from the company so that they can talk more intelligently with their husbands about it—and only 2% say they receive such information?"

"What can be done about the situation?" Miss Brown suggests that you first determine what you want to sell the wife and secondly how you should go about it.

Sell Wife on Husband's Professional Status

"Number one on that list of things to sell the wife is her husband's status as a professional salesman," she said.

"She can't help a husband she doesn't respect. And while our surveys show that the wives admire their own husband-salesmen, they aren't oversold on other salesmen.

"When wives were asked about selling as a profession, there was enough distaste expressed to indicate that every effort should be made to sell selling as a profession—to women.

"Next, we have to sell the problems of salesmen.

"The majority of replies indicate that the women 'put up with' rather than sympathize with their husbands' work habits. They detest paper work at home and don't see the need for most of it. They don't like overtime.

"They can't understand why meetings have to be held outside of working hours. They almost would rather have their husbands quit than continue with excessive traveling. The wives do not blame their husbands for these problems. They blame the company.

Must Sell Wife on Firm, Boss, Products

"So, you have to sell the company. And by the company we mean the entire organization the salesman works for—the product—and, very important, his own immediate boss.

"Actually, these jobs should be easy, because the wife's disapproval doesn't mean she is not interested. The majority of wives interviewed were interested in all these things.

"Few complaints were registered either by mail or in the field trips about husbands who talked too much about the job; no complaints, about companies that try to explain their business and their product to them. Where the salesman's job had been explained, the wives were more enthusiastic and more co-operative.

"Finally, we went to see the wife concerning her importance as a factor in the salesman's success. You may think wives know this. But I guess it's like love—they need to be constantly reminded.

Give Women Information Concerning Company

"All the questionnaires and interviews indicated a great willingness on the part of the wives to make a real contribution. But they said because of (Concluded on next page)

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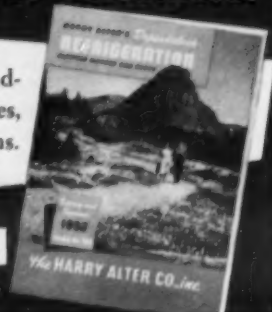
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DIFFERENT
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Talk about something to sell! The Scotsman line is the only one that enables you to offer a machine for every ice need. From a pound to a ton! Super Flakers produce clear, hard, individual bits of "crushed" type ice. Super Cubers produce big, round, solid crystal-clear cubes, perfectly shaped.

★ Strongest Advertising Program Ever!

The Scotsman advertising program is potent every year, but in 1956 you'll see the biggest schedule in Scotsman history. Over 100 ads in leading publications will help you do the job and get more profitable sales.

★ Terrific Merchandising Program!

Nothing... we said nothing... has been spared in the 1956 program to give you the best local selling package you can find. Easy-to-use promotion kits, case histories of other successful dealer programs, special material for all local needs. It's all yours with the Scotsman franchise.

★ Tested, Proved Machines — Thousands in Use!

The Scotsman flaking mechanism and cube-making design are the most practical made today. Thousands of Scotsman machines are in operation daily. This means you sell a tried and true line—no guesswork! All Scotsman Ice Machines connect easily into standard electrical outlets.

★ Priced to move — liberal profit deal!

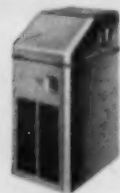
Scotsman price schedules have been hailed as the big ONE-TWO punch! First, you can talk turkey to prospects about attractive user prices. Second, you'll find that your profit per machine will make your eyes pop. Don't miss out on this chance to get good volume... and profitable volume... go Scotsman in '56!

★ New For '56 — Scotsman Super Bins

To give you even more sales opportunities, Scotsman is introducing this year a full line of sturdy, well-designed storage bins. These Super Bins, 15 models in all, are ideal for large volume crushed ice users, and those with peak demands. A continuous-flow Super Flaker and a Super Bin make an ideal team!



MODEL SF-75WSA
Up to 200 lbs. daily



MODEL SF-1E
Up to 350 lbs. daily



MODEL SF-3WSE
Up to 1050 lbs. daily



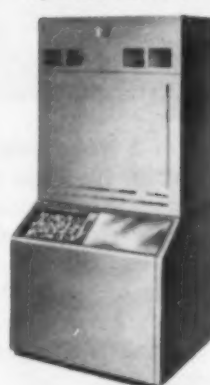
MODEL SF-2E
with 750 lb. Super Bin



MODEL SC-100
Up to 110 lbs. daily



MODEL SC-200
Up to 225 lbs. daily



MODEL SC-500
Up to 500 lbs. daily

NAIL DOWN YOUR FRANCHISE NOW!

With the peak season coming up, get in on this great Scotsman bandwagon now. Write immediately to get complete franchise information. It'll be your smartest move of the year. Get a letter off today!



AMERICAN GAS MACHINE CO.

DIVISION QUEEN STOVE WORKS, INC.

203 Front Street, Albert Lea, Minnesota

For more information about products advertised on this page use Information Center, page 16.

Wives Help Increase Sales--

(Concluded from preceding page) lack of knowledge they didn't know quite what to do. So here, quickly, are a few suggestions.

"With a high cost of selection and the fantastic cost of today's turnover, wives should in some way be tied in with the job interview. Some companies go as far as to interview the wife after they have tentatively selected the salesman.

"Others arrange 'drop-in' visits before the final seal of approval has been put on the man. Whatever method is used, certainly misunderstandings can be cleared up at this early stage and tragic errors avoided . . . if it's obvious to the person doing the selection that the wife is opposed to the type of work, does not like your compensation, or would not move.

Explain Opportunity, How Work Affects Home

"If possible, prepare a brochure or manual for the wife, explaining the job opportunities and those phases of work that affect the home.

"Here again we find literally thousands of brochures prepared for the salesman. But even when they are sent to the home, the wife rarely reads them because family motives are not taken into consideration.

"Invite your wives to occasional district, regional, and national sales meetings. But don't—don't—make the mistake of patronizing them. And don't think the wife's only role is to be entertained.

"If you invite her to your business meetings have her attend a business session. If you have speakers with a reputation, let them also address the wives. Or, let the wives join in for a group session. If the conference method is effective with your salesmen, it's effective with their wives.

"Next, plan your after-hours sales meetings in advance. Don't continually pull them as surprises on your men. They can adjust to these surprises to be a 'good fellow.' But the wife's

reaction is only that you are inconsiderate.

"And since probably one of the fundamental reasons you held the sales meeting in the first place was to give the man a lift—you'll find the 'lift' won't carry to the next day if he takes a beating at home.

"Make your communications with the wife constant, rather than sporadic. Too many companies that do anything about the problem write her a lovely welcoming letter and then never contact her through any other medium, until a year later when they are running a contest. The officers of various departments in your company can do a tremendous job to build up a man in the home.

"In our survey, we asked the women what they considered the most important single factor in evaluating a job. Such things as security, opportunity, pay, reputation of the company, etc., were listed.

"To our amazement, only 3% of 15,000 women rated pay as the most important factor. Forty per cent consider opportunity for advancement most important, and 33% sought security first.

Most Want Recognition, Encouragement

"For every woman who wants more money, five women want only encouragement to do well and recognition for a job well done. You can make a couple happy and, more than that, you can build and keep a better sales force, just by remembering to say: 'Jim's quite a guy.'

"On the other hand, you should not forget to spend a little money on the woman. For example, when moving a man, companies very often will pay all of his expenses, and even go so far as to pay for an initial visit to the town to look it over before he goes.

"If they would add to that amount, or if necessary substitute for that, a check for the wife to visit the town before the move is made, a lasting im-

pression would be gained, and perhaps many dollars saved.

"Salesmen are accustomed to having companies spend money on them. But our facts indicate that a dollar spent on the wife is worth 10 spent on the husband. Not only does she like it, but he does too.

"With a few well-placed expenditures you can make her look at her husband with new eyes, feeling that he is quite an important man in your organization. And when she feels that way, you get a better day's work.

"Perhaps you may think the following things are trifling. But if you were to read through hundreds and hundreds of questionnaires and, in answer to the question, 'What was done for you by the company that you liked, and that made an impression on you?' found the continual mention of flowers for some occasion—it might not seem trivial.

"Assume the husband is away for a week's convention—flowers at the home with a nice note from the sales manager because you have robbed her of her husband that week will hit the right note.

Pay for Call Home If He's To Be Away

"Or, if you hold a meeting, or keep a man away over some important holiday—pick up the check for a long-distance phone call for the man to his home. It won't be forgotten.

"Do you take pictures of your men for your house organ? Have a good job done, frame one and mail it to his wife with your compliments.

"Ever try letting the husband and wife have a night 'on the town' at the end of a contest? And then arrange by a note to the hotel manager where you are providing the meal to have a corsage and cocktails at the table.

"His wife will talk about it to the neighbors and her friends, and every time she repeats it she gets more sold on your outfit.

"Nowadays, sales contests which involve the wife are

coming more and more into the picture. But you might go even a step further.

"For example, how about letting your men win bonds to be made out to their children for their education? Or having one contest pay off exclusively in wives' prizes, and let her know he is working for her? If your contest prize is a trip, you might try one for half the distance, but bring two.

"Now, how about your records? I'm sure your files indicate the names of your men, past employment, type of work, where they were born, what his temperament is, his experience, etc.

"But do they include the wife's name, or the names of the children? When you drop him a note, do you refer to the wife. Do you have the facts to say: 'And Mildred will be interested in this, too.'

Attitudes That Make Women 'Different'

"So, let's take a quick look at some of the basic attitudes which make women very different creatures from men.

"One psychologist illustrates it by giving this example: Ask a man the question, 'Where did you buy this steak?' He'll answer, 'At Green's Meat Market.' Ask his wife the same question, and she'll answer, 'Why? What's wrong with it?'

"A woman tends to see almost everything in terms of herself. For example, when you are discussing her work (whether

in the home or in the office) a woman is more likely to think you are discussing her. It's a rare woman who realizes that you can consider her work separate and apart from her as a person.

"Women are extra-sensitive to other human beings, observe them more carefully than most men do, and tend to 'feel' their moods. The knowledge that comes from this sensitivity is registered and stored away somewhere in the nether regions of a woman's mind. It pushes out when the right set of circumstances calls it forth.

"The simple truth is that women are more interested in people than in things. Women do gossip—because they're intensely interested in people. And talking about others is a by-product of that interest. The use of the mirror is taken up at an early age—and it's habit forming.

"Men might call it all vanity, but actually women do these things only because they are 'people-minded.' They need—as, of course, most of us do, the good opinion of others if they're going to be happy.

"But the average woman is predictable to this extent: If she feels that she is being treated fairly and that you recognize and respect her as an intelligent individual in her own right, her gratitude will show up in her cooperation and real application to the job at hand.

"Now, can you ask for anything more?"

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Newly designed, Model "1000" Auto-Lite Recorder gives permanent proof of temperature behavior. • 6" clear reading chart; various standard ranges from minus 40°F. to plus 550°F. • 3 standard types; choice of 24-hr. or 7-day cycle. • Electric or mechanical chart drive. • With capillary tubing for remote reading. Priced from \$49.50.

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Seals Both Ends of Line AUTOMATICALLY INSTANTANEOUSLY

Quick Connective Fluid Line Couplings for
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FEMALE PIPE THREAD CONNECTIONS FROM 1/4" TO 1"

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from 1/8" to 1" inclusive. Available in brass or steel.

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QUICK-CONNECTIVE FLUID LINE COUPLINGS

Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



Spring Service on Room Units (2)

'MY ROOM COOLER IS AWFULLY NOISY'

"Awfully noisy" is a purely relative term. It depends on whether the user is the calm type or a nervous individual prone to exaggerate; also, it may depend on where the room conditioner is located.

You may get a call that the conditioner is so noisy that it drowns out conversation, and it has to be shut off in order to use the telephone. You rush out

expecting to find pieces all over the room, but, instead, find a little tubing rattle.

Or you may get a call from another user, to drop around sometime when you are in the neighborhood, for the room cooler isn't as quiet as it used to be.

So one day when you are nearby and have a little extra time, you make the call. As you go around the house, you hear it, and you wonder why the neighbors haven't got up a petition. You work three hours, but only charge the user for two, for he was such a nice, patient guy.

If the conditioner is in a bed-

room, the user is apt to be much more noise conscious than if it is in the living room; a much louder noise may be partially covered up by conversation, television, or radio.

Moreover, people vary in their reaction to different kinds, intensity, and pitch of sounds. Certain sounds, although not loud, may be much more irritating than other types of sounds of far more volume.

Some people easily get used to medium pitch sounds of unvarying volume or intensity, whereas, a high squealing sound, particularly if it changes tone may soon have them fidgeting and cross.

So, be patient with users when they complain of noise. It may seem almost negligible to you; but you don't have to sit and listen to it day after day or night after night. If you did, it might have you biting your fingernails, and snapping at the children.

CLASSES OF NOISY OPERATION

In general, there are about six kinds of noisy operation of room air conditioners, as classified by their sources.

1. A mechanically noisy compressor. This is often the easiest to identify, but it may require much more extensive repair if the bearings are loose, or if there is a broken discharge or suction valve.

It may require replacing the entire unit, if it is a sealed system; or the motor compressor only, if the manufacturer's service policy permits, or if the construction of the unit make it feasible to replace the motor-compressor only.

Or, on some types of compressors, it may be possible to make some kinds of internal compressor repairs on the users' premises—such as replacing discharge or suction valves.

2. Compressor slugging oil or liquid. It is sometimes difficult to distinguish this noise from mechanical noise of the compressor. Slugging in a room air conditioner is caused by the same things that cause it in other types of equipment, and is so well known to the experienced serviceman that it hardly needs elaborating on here.

However, there are circumstances in connection with a room air conditioner of the window or the through-the-wall type that aggravates slugging, even more, perhaps, than most other applications. In these two styles of room air conditioner, the condensing unit—motor-compressor and condenser—are exposed to the outside temperature. As a result, it is not unusual for the compressor to be cooler when the unit is started, than the evaporator, so a large part of the refrigerant may be in the compressor when the unit is started; the suction pressure drops quickly, the refrigerant is rapidly released from the oil, the oil foams, and we have the knocking of the compressor trying to pump a non-compressible liquid. Thus we get the noisy operation that we call "oil slugging" or "liquid slugging."

Dirty air filters are a frequent cause of slugging: the suction pressure drops, the suction line frosts, and we are apt to have liquid refrigerant

entering the compressor, with consequent slugging.

3. Condenser fan or cooling fan. Fans can be mechanically noisy—loose on the shaft, blades loose on the hub, worn bearings, blades striking the shroud, etc. Such sources of noise should not be very difficult to find or even to repair.

Sometimes more difficult to locate, are out-of-balance fans. Out-of-balance can be caused by one blade being heavier than the others; or, in the case of propeller type fans, it may be due to one or more blades being bent at a different angle than the others. This is sometimes difficult to locate and correct.

Especially in the case of the "Squirrel cage" or co-axial fan, a whistling noise may be caused by the fan being incorrectly positioned in the fan housing.

4. Loose tubing, sheet metal parts, bolts, nuts, etc., or in case of belt-driven fans, a too-loose belt or a worn belt. Vibrating tubing can be corrected better by wrapping several turns of aluminum foil around the tubing, than by attempting to bend the tube. The same applies to tubing rattling against sheet metal parts; wrapping or wedging the tubing with aluminum foil is usually more effective, and less apt to cause a leak, than trying to bend the tubing.

5. Entire unit insecurely mounted or not well balanced. The manufacturers of window units put a lot of ingenuity into their mounting designs, and an incorrect and hurried installa-

tion is more likely to be the cause of a bad mounting job.

When installing a window unit or a through-the-wall unit, read the instructions and follow them carefully. Doing so may save you a lot of trouble.

It is rarely good practice to sell a unit without installation, to a do-it-yourself buyer. It is possible, of course, that he may make a good installation, but the odds are at least 10 to 1 that he won't.

In most cases, the service engineer doesn't have much to say about whether the sale will be made without installation; but it is a good bet that he will have lots to say, to himself at least, when he is called upon to correct such an installation. It is often easier, and takes less time to install the unit properly in the first place, than to re-install it.

6. Harmonics. High pitched sounds from two or more loose pieces of tubing, or sheet metal parts, vibrating at different periods, combine to produce a low pitched sound called a "harmonic," which can be very irritating. The sound of two motors running at slightly different speeds can also cause a harmonic. It can often be identified by a regular rise and fall in pitch and volume of the sound.

When you find one of the vibrating parts, wrap it with metal foil or otherwise change its period of vibration, and the harmonic will disappear.

(To Be Continued)

New Small Size! Lowest Cost Ever!

new...



water coolers



Cadet Model BT-2S over-all measurements only 12" square x 36" high, (excluding bottle).

At last . . . an efficiency size, budget-priced bottled water cooler for high volume sales to offices, stores and countless other locations. Completely new Temprite Cadet water coolers are smartly fashioned to complement modern interiors, designed for installation in areas no larger than a square foot . . . and they're amazingly low priced! Temprite Cadet Model BT-2S uses bottled water . . . serves 60 people hourly under normal conditions . . . features new *whisper-quiet* operation!

Cadet coolers for connection to local water supply also available.

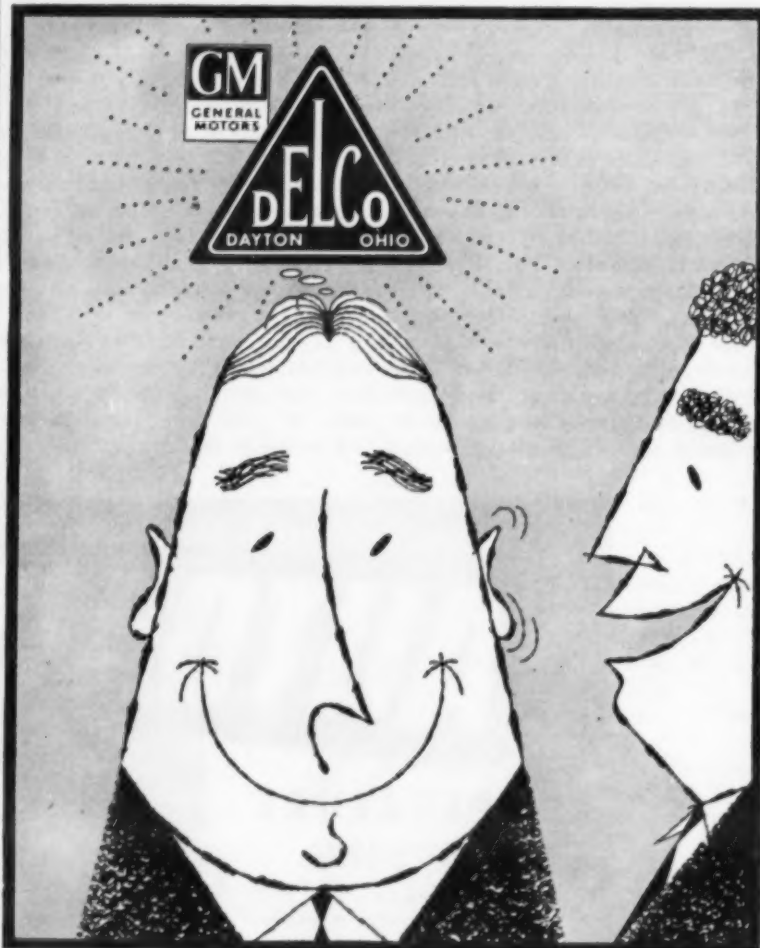
DESIGNED FOR HOMES!

Temprite Cadet Model KT-2S, designed expressly for homes, doctor's offices, laboratories, etc. Unit is standard counter height, finished in glistening white. May be used with 2, 3, or 5 gallon bottles, or water reservoir may be filled from kitchen tap. Sanitary cover optional.



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P. O. Box 72-A, E. Maple Rd., Birmingham, Mich.
Please send me complete data on new Temprite Cadet water coolers.

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"I always depend on **DELCO PRODUCTS**
... it's the one complete electric
motor source for our business."



Delco Products makes more models and types of motors for the air conditioning industry than any other manufacturer. For quick delivery call your nearby Delco Products Electric Motor Distributor.



DELCO Electric MOTORS
DELCO PRODUCTS, DIVISION OF GENERAL MOTORS, DAYTON, OHIO

Proved best by Performance!

How Residential Cooling-Heating System Controls Function (3)

Of the many components that make up a residential air conditioning installation none is more important than the controls. While a good control system cannot overcome mistakes in sizing of equipment or improper duct design, the best installation will not give satisfaction without proper controls.

The following is the third and final section of an article by Douglas S. Sterner of General Controls discussing controls for residential air conditioning.

By Douglas S. Sterner, Manager, Air Conditioning-Refrigeration Controls Div., General Controls Co.

There are three types of pressure controls—low pressure, high pressure, and a combination of both commonly known as dual pressure. They can be operating controls, safety controls, or a combination of both.

Operating controls generally are of the dual-pressure type. The low-pressure side of the control operates the compressor to maintain the desired evaporator or suction pressure between the cut-in and cut-out settings of the switch. The high-pressure side operates as safety control.

Thermostat Controls Solenoid Valve

Temperature is maintained by the room thermostat controlling a solenoid valve in the liquid line to the evaporator. There are several advantages to this, the pump-down system.

Safety controls are either a dual pressure control or a high-pressure control, with temperature maintained by the room thermostat operating the compressor.

Thermostatic expansion valves maintain the proper rate of flow of the refrigerant to the evaporator regardless of the basic control system.

Expansion valves come in a wide range of sizes and designs and are available also with liquid-charged or gas-charged power elements. The gas-charged valves are used in most direct expansion residential units, since high temperature air during the heating season which is in contact with the expansion valve and would rupture the diaphragm of a liquid-charged valve.

Controls Developed For Home Units

Control panels, Fig. 7, recently have been developed for residential air conditioning units and have a number of distinct advantages:

1. Most, if not all, of the electrical elements required for completely automatic operation of air conditioning equipment are combined in a master control panel package.

2. All panel components are pre-wired to accessible terminal blocks.

3. All components are front-connected for easy checking.

4. Panels are UL approved.

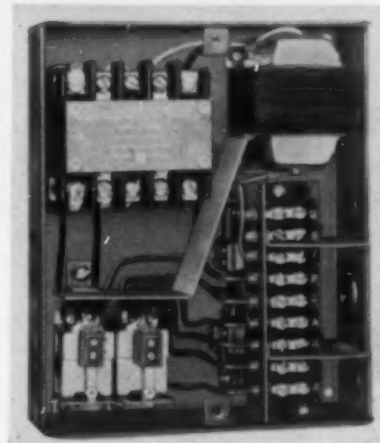
5. Installation wiring is made easier, quicker, less expensive, and more certain for the equipment manufacturer.

6. Field installation is greatly simplified. (See Fig. 8.) In many instances, all the external field wiring required is to connect to the panel the low-voltage wires from the thermostat and the line-voltage power lines. These are connected directly to the proper terminal strips, easily identified, in the panel.

Control panels may contain

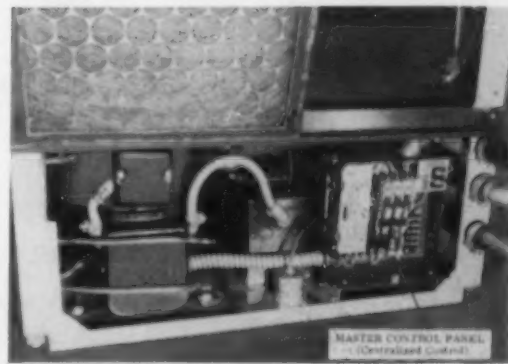
some or all of the following components as required by air conditioning manufacturers.

- (a) Contactors.
- (b) Transformer.
- (c) Heating relay.
- (d) Blower relay.
- (e) Reset circuit relays.
- (f) Low-voltage terminal strip.
- (g) Line-voltage terminal strips.



LEFT: Fig. 7—There is a definite trend to use of master control panels to simplify residential air conditioning field installations.

RIGHT: Fig. 8—With master control panels, field wiring generally consists of merely bringing line voltage to the unit and running thermostat wires.

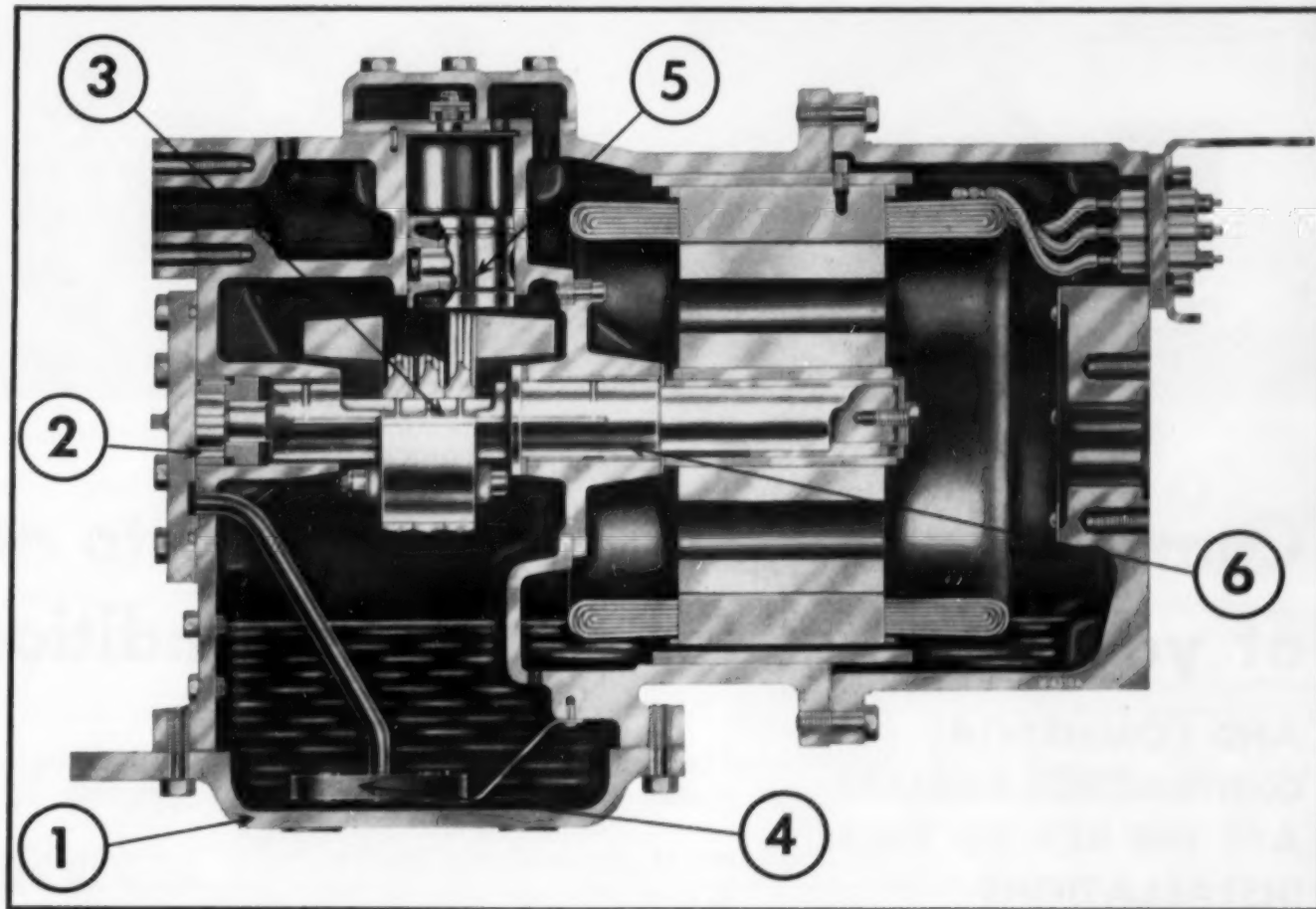


that are necessary to supply the many and varied equipment requirements, General Controls is manufacturing over 50 different standard control panels and expects to add many more to the line in the near future.

In addition to these standard panels there are many special panels to fill the many different requirements of air conditioning

equipment manufacturers. It can be readily ascertained that a correctly-designed control system for residential air conditioning consists of a number of controls, all of which perform a specific function. But all must be carefully selected and integrated for satisfactory operation of the complete system.

Worthington compressor gets 7 new design features



Air conditioning and refrigeration manufacturers, here's news! Now you can offer the best-designed, best-engineered, field service-hermetic compressor on the market as the heart of your air conditioner, liquid chiller, or commercial refrigeration system. Sizes from 2 to 7½ hp. Look at these new features that help make this Worthington compressor the sales-clincher you've been looking for.

- (1) Recessed crankcase increases oil capacity.
- (2) Positive action gear pump for forced feed lubrication of main and crankpin bearings through (3) rifle drilled drop forged crankshaft.
- (4) Aircraft type oil filter.
- (5) Light weight aluminum pistons and rods for balanced reciprocating forces and smoother operation.
- (6) Precision-bored main bearings for smooth operation, long life.
- (7) Reduced maintenance, with non-selective fits for all renewable parts.

Send this convenient coupon for complete product and application data, performance curves, dimensional drawings—compiled in Worthington's OEM handbook.

A.6.79

Worthington Corporation
Air Conditioning & Refrigeration Division
Section A.6.79-AC, Harrison, New Jersey

Gentlemen:

- ☐ Please send me your OEM Handbook today.
- ☐ Please have a salesman call for an appointment.

Company _____

Position _____

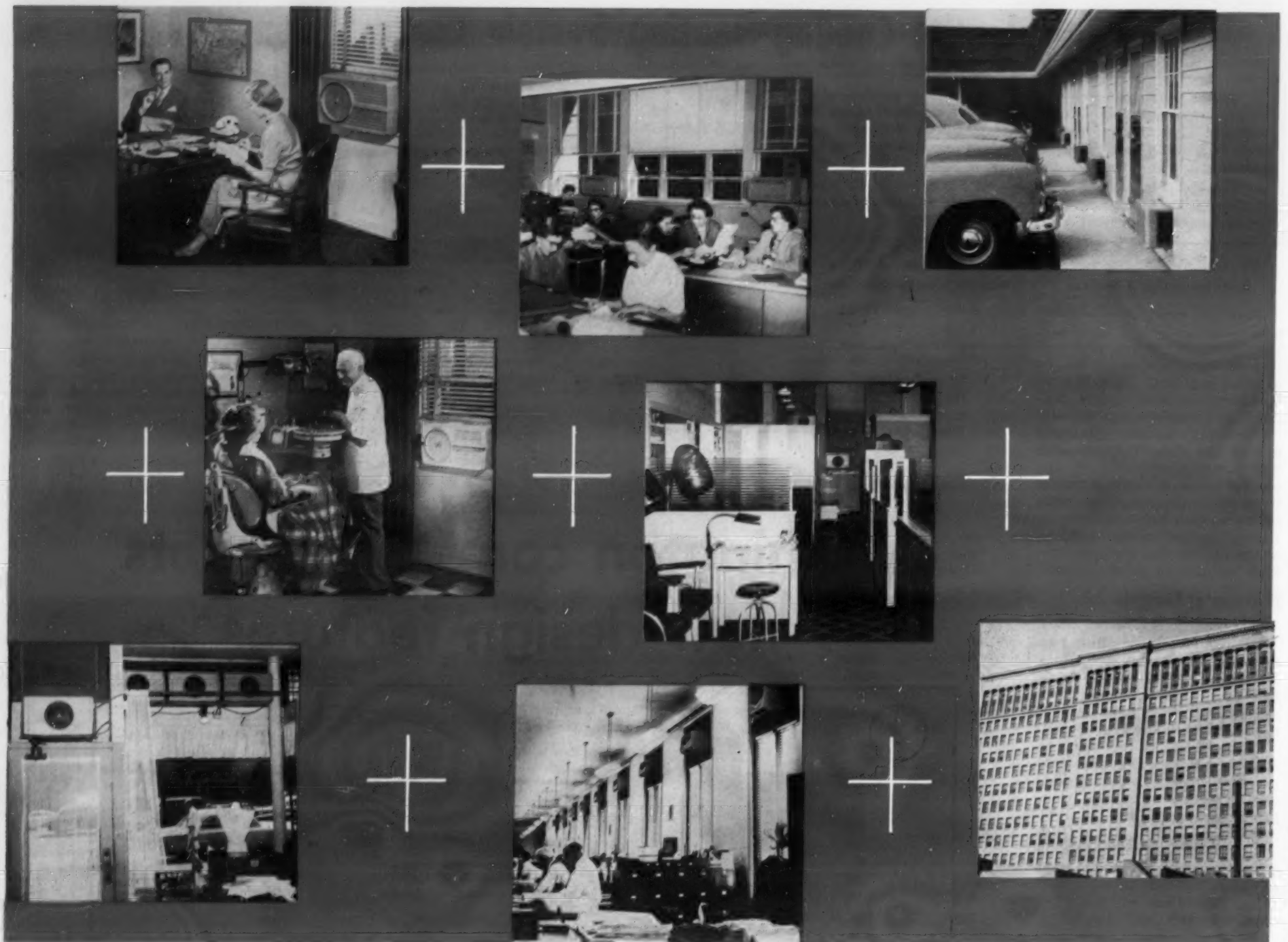
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City _____ Zone _____ State _____

WORTHINGTON



CLIMATE ENGINEERS TO INDUSTRY,
BUSINESS AND THE HOME



Commercial installations add up to nearly 50% of your market for room air conditioners

AND COMMERCIAL CONTRACTOR-DEALERS ARE THE KEY TO THESE INSTALLATIONS

Over the last eight years some 2,131,600 room air conditioners have been installed commercially throughout the U. S. by commercial contractor-dealers. This represents nearly 50 per cent of all room air conditioners sold, and in view of the vast untapped prospective commercial market this is only the beginning.

The men who hold the key to this market are the commercial air conditioning contractor-dealers. (And they sell to the residential market, too!)

More commercial air conditioning contractors read AIR CONDITIONING & REFRIGERATION NEWS than any other publication in the field.

No doubt about it, the NEWS will carry your sales story to contractor-dealers who sell the bulk of the room air conditioners every year.

These are well established dealers who have sold and will continue to

sell to the apartment houses, motels, hospitals . . . to the barber and beauty shops . . . to the doctors' and dentists' offices . . . and to the banks, stores, and office buildings in their many communities.

Any way you add it up, AIR CONDITIONING & REFRIGERATION NEWS is your key to ever-increasing room air conditioner sales in an ever-expanding market—and at a surprisingly low cost to you. For a solid sales foundation tomorrow, advertise now in the NEWS! Do the first job where the first job is being done!

**AIR CONDITIONING
& REFRIGERATION**

The Newspaper of the Industry



NEWS

The Newspaper That Carries More Advertising By Far Than Any Other Publication In The Field.

450 West Fort Street, Detroit 26, Michigan
NEW YORK, 521 Fifth Ave., MUrray Hill 7-7158, Robert M. Price.
CHICAGO, 134 S. LaSalle St., FRanklin 2-8093, Allen Schildhammer.
DETROIT, 450 West Fort St., WOodward 2-0924, J. B. Sullivan.

Hupp-Gibson -- Refrigerator Parts Tax Proposal --

(Concluded from Page 1, Col. 3)

approve the agreement. On the same date, Hupp will hold its annual meeting of stockholders, and they will be asked to authorize additional shares for the Gibson acquisition.

It is planned that the present management of Gibson will continue to operate Gibson Refrigerator Co. as a division of Hupp.

The Hupp directors announced the resignation of D. S. Smith as president of Perfection Industries Div. of Hupp, and elected William H. Haag as president of the Perfection Div. Smith continues as a director and vice president of Hupp and will be active in corporation matters.

Under the proposed purchase plan, Hupp will assume substantially all of the liabilities of Gibson. In addition, it will pay Gibson Refrigerator, in approximate amounts, \$1,200,000 of subordinated debentures convertible into Hupp common stock, \$7,500,000 par value of Series A 5% convertible preferred stock of Hupp, and 600,000 shares of common stock.

These amounts are equal to \$2 of debentures, \$12.50 par value of preferred stock, and one share of common stock for each share of Gibson common stock.

In addition, it is expected that Gibson Refrigerator will have tax recoveries of approximately \$600,000 or about \$1 per share of Gibson stock. At present market values, this amounts to the equivalent of approximately \$19 per Gibson common share.

(Concluded from Page 1, Col. 4)

the proposal approved, it is believed.

In the Frigidaire case, the Claims Court ruled that a company which sells an item subject to excise tax is entitled to a refund of a portion of the tax on any repair or replacement costs that it has, under a warranty, included in the original sale price.

The Treasury and Congressional tax staffs argued that the decision was not in accord with the intent of Congress and, if not reversed, would cost the Government millions of dollars in tax refunds. Business groups urged the subcommittee not to approve the tax staffs' recommendation for retroactive reversal of the ruling.

\$1,000,000 REVENUE LOSS ESTIMATED

The subcommittee estimated that removal of the tax on refrigerator parts and components would result in a \$1 million a year revenue loss.

In addition to repeal of this tax, the subcommittee recommended exempting from the 5% appliance tax all electric direct-motor driven fans and air circulators not of a household type.

Also, the subcommittee recommended applying the 5% appliance tax to gas incinerator-type garbage disposal units.

SIMPLER REFUNDS EXEMPTIONS STUDIED

Approved by the subcommittee was a Treasury-Congressional staff recommendation for a uniform and simpler system of exemptions and refunds for manufacturers' excise taxes and for other excises where applicable.

Regarding direct sales, the subcommittee stated that a manufacturer selling both directly and through wholesalers should compute his manufacturers' tax in all cases on the basis of the price he charges the wholesalers.

However, this would not apply in industries where direct sales to retailers is the normal method of distribution, or where the manufacturer does not make a significant number of sales to independent wholesalers.

It was suggested by the subcommittee that Congress write into law present Internal Revenue policy that the service has the right to compute the price on which tax is to be paid in cases where a manufacturer sells to a selling subsidiary.

CLARIFICATION OF TREATMENT OF COOPERATIVE AD FUNDS

Also approved by the subcommittee was an Internal Revenue plan to clarify the tax treatment of money spent by manufacturers in cooperative advertising campaigns with distributors.

This plan calls for tax to be paid on the full amount when a manufacturer's selling price includes an advertising charge not separately stated. If a manufacturer requires his customers to pay a separate and clearly-identified amount for advertising purposes into a separate fund which remains the property of the customer, no tax would have to be paid on this amount.

If the manufacturer makes a payment into a separate advertising account which he controls, he must include such payments in his selling price and pay tax on them. However, if he withdraws the money from the fund and pays it to his distributors for actual advertising outlays, he could readjust his selling price and get a tax refund or credit.

The new rules would apply to both national and local advertising.

OTHER RECOMMENDATIONS

Other subcommittee recommendations would set forth clear rules for the tax treatment of installment accounts sold at less than face value, and establish new procedures for obtaining refunds on floor stock when excise rates are lowered.

The subcommittee also recommended giving the Treasury Dept. authority to permit small retailers, door-to-door salesmen, and others to let their suppliers file excise tax returns for them.

In addition, the subcommittee asked the full committee to recommend that the Internal Revenue Service establish a special semi-independent board to review excise tax rulings and settle disputes on appeals by taxpayers.

Additional Year Round Profits For You With . . .

EASTONAIR

AIR FRESHENER AND DEODORANT
for all Air Conditioning and Heating Systems

Unconditionally Guaranteed
COMPLETE PROFIT-PROMOTION PLAN FOR MANUFACTURERS AND HEATING AND AIR CONDITIONING FIRMS

EASTON S.S. CORP.

Dept. A, 876 Pacific Street
Brooklyn 38, N. Y. • MA. 2-3110

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

Contracting Office, U. S. Army, Camp Irwin, Barstow, Calif. Furnish and install MECHANICAL AIR COOLING AND VENTILATING SYSTEM (package type units) in Post Theater, Bldg. No. 7, Camp Irwin, Barstow, Calif.—Job—IFB AVI-04-013-56-26—Bid Opening 20 March 56.

Commanding General, III Corps, Fort Hood, Texas. AIR CONDITION BUILDINGS Numbers 1615 and 1619 at Gray Air Force Base, Killeen, Texas—Job—IFB AIV-41-093-51-145—Bid Opening 16 April 56.

Chicago Procurement Office, Corps of Engineers, U. S. Army, 236 West Jackson Blvd., Chicago 6, Ill. DISPENSERS, DRINKING WATER, mechanically cooled, various types and sizes—1,130 ea.—IFB 56-276(B)—Bid Opening 27 March 56.

NAVY

Officer in Charge of Construction, Naval Air Advanced Training Command CMM, Corpus Christi, Texas.

REMOVING TWO EXISTING AIR CONDITIONING UNITS PROVIDING TWO PACKAGED AIR CONDITIONING UNITS, Two Cooling towers, pumps, ductwork, piping, electrical wiring and controls—Job—IFB OY 1061—Bid Opening 22 March 56.

AIR FORCE

Purchasing and Contracting Office, Keesler Air Force Base, Miss. INSTALLATION OF AIR CONDITIONING and alterations to Bldg. No. 4307, Keesler Air Force Base, Miss.—Job—IFB 22-600-56-60—Bid Opening 30 March 56.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 5, 575 U. S. Courthouse, 219 South Clark St., Chicago, Ill.

SUMMER AIR CONDITIONING for Rooms 213-227, 227C, 227T, for the U. S. Post Office and Courthouse, Cincinnati, Ohio—Job—IFB C&R5509—Bid Opening 27 March 56.

U. S. TREASURY DEPARTMENT

Procurement Office, Bureau of Engineering & Printing, 14th & C Sts., S. W., Washington 25, D. C.

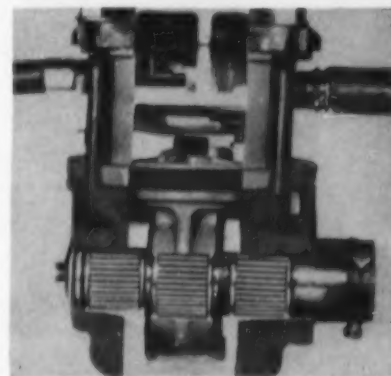
CONTROLLED HUMIDITY AND TEMPERATURE CABINET—Complete—IFB BEP-140—Bid Opening 4 April 56.

Solve your service problems with the ACE Diaphragm Descaling Acid Pump.

- All parts in contact with descaling compounds are acid resistant . . . Neoprene diaphragms . . . nickel-iron pumping chamber. Stainless steel valve parts.

- Entire unit is portable . . . pump and motor mounted on sturdy base with convenient carrying handles.

- Manufactured and guaranteed by the makers of the complete line of Ace cooling tower circulating pumps . . . ¼ H.P. to 7½ H.P.



Manufacturers representatives and distributor inquiries invited.



Ace Pump Corporation

140 Hernando Street • Memphis 3, Tennessee

Unmarred!

Air conditioning and refrigeration units are handled safely and efficiently — go to work unmarred — with ELKAY Moving Pads and Covers, Appliance Trucks, Dollies, Straps and Casters. Write for complete FREE CATALOG!

ELKAY PRODUCTS CO.
323 27th W. 16 St., N. Y. 11, N. Y. • Watkins 9-1148

SALES ENGINEER FOR SOUTHERN CALIFORNIA

The man we need is a specialist in the residential heating and air conditioning field who can assume the responsibilities of District Sales Manager. He must have a good technical background in air conditioning and experience in merchandising, selling and training of existing and new exclusive heating and air conditioning wholesalers.

The products are a complete line of residential heating, a line of commercial store units from 3 to 15 tons, and a complete residential air conditioning line which represents the greatest advance in air conditioning in the past fifteen years.

This is a top flight position with one of the nation's largest and most progressive manufacturers of heating and air conditioning equipment. Only well qualified men will be considered. Salary and bonus will be commensurate with ability and experience.

All applications will be treated in the strictest confidence. Write immediately, giving brief resume of your experience, family responsibilities, age, and reason for desiring change of position. Address letter to J. L. Hoyer, National Air Conditioning Product Manager.

RHEEM MANUFACTURING COMPANY

7600 SOUTH KEDZIE AVENUE
CHICAGO 29, ILLINOIS

You've Never Seen Anything Like It Before!



AN ACID SCALE REMOVER SAFE ENOUGH TO USE ON GALVANIZE!

No scale remover ever made can give you the concentrated cleaning power of VAPCO . . . plus this added safety.

You can prove it to yourself. Ask your wholesaler for a demonstration today, or write

GARMAN COMPANY, INC. St. Louis 23, Mo.



DEPENDABLE

Pressure and Temperature Controls for Air Conditioning & Refrigeration

Bulletin 836-837 controls are accurate, compact units which handle a wide range of pressure and temperature applications. The Allen-Bradley precision switch has no "dead center" and no bearings to cause delay . . . it is "positive" in action. The pure silver contacts are good for millions of trouble free operations. For detailed information, write for Bulletin 836-837.

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.
In Canada—Allen-Bradley Canada Ltd., Galt, Ont.

The Sign of
QUALITY
MOTOR CONTROL

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL

Servicing Automobile Air Conditioners

BY C. DALE MERICLE

This is the first instalment describing the air conditioning system installed in Lincoln and Mercury automobiles manufactured by Lincoln-Mercury Div., Ford Motor Co.

Makes previously discussed include A.R.A., Frigikar, Automotive Air Conditioning, Pivot, Novi, Oldsmobile, Buick, Pontiac, Chevrolet, Ford, Nash, Mark IV, and Mobil-Aire.

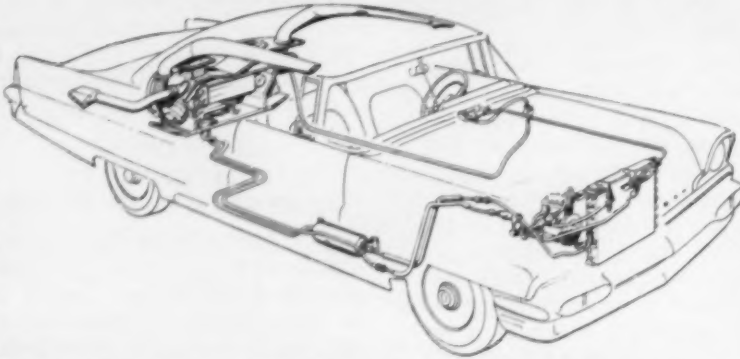


FIG. 1—Over-all layout of factory-installed air conditioning system employed on Lincoln and Mercury cars.

LINCOLN-MERCURY (1)

Lincoln-Mercury Div.
Ford Motor Co.
Detroit 32, Mich.

DESCRIPTION

Air conditioning has been offered by Lincoln-Mercury Div. as a factory-installed optional accessory on Lincoln beginning with 1953 models and Mercury starting with 1955. It follows the conventional arrangement.

Compressor mounts on the engine block, condenser is located in front of the car radiator, and evaporator-blower assembly is installed in the trunk. (See Fig. 1).

Conditioned air is delivered to the passenger compartment through ducts in the headlining. Outside air intakes are provided.

Air conditioning controls are mounted on the lower edge of the car instrument panel.

"Freon-12" is the refrigerant employed in Lincoln and Mercury systems. The charge is 6½ lbs.

Compressor

A standard two-cylinder reciprocating type compressor is used.

It is mounted on the right cylinder block and is belt-driven by a pulley from the crankshaft. On 1953 through 1955 Lincolns and on 1955 Mercurys the compressor operates whenever the car engine does.

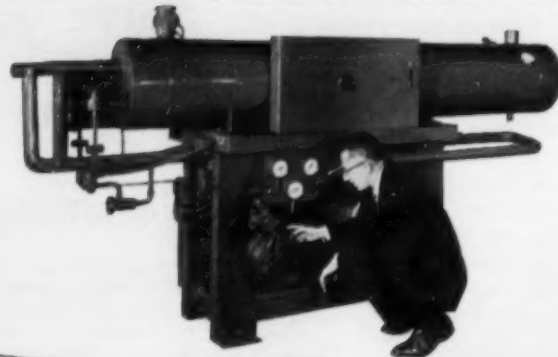
A magnetic clutch was introduced on 1956 systems for both cars. The clutch disengages the compressor when the air conditioning control is turned off.

Compressor used with the magnetic clutch has a tapered shaft, so the 1956 compressor is not interchangeable with that used on 1955 models. Other com-

Acme
INDUSTRIES, INC.

JACKSON, MICHIGAN

manufacturers of
QUALITY
air conditioning
and refrigeration
equipment since 1919



NEW FLOW-THERMA®

...complete packaged chillers with capacities from 20 thru 175 tons

Here's the new line that incorporates the Acme Dry-Ex chiller with a star-insert tubing, an advanced design, moderate speed compressor and other proven Acme components that together pack more chilling capacity in smaller size units than ever before possible.

another outstanding new line—Acme Flow-Cold packaged chillers, capacities 3 thru 20 tons

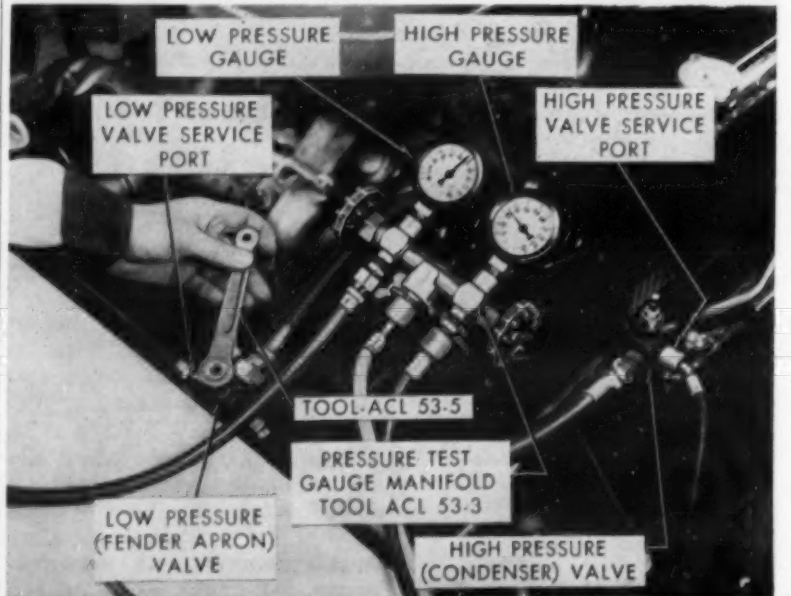


FIG. 2—Suction service valve is on right fender apron; discharge service valve on condenser of Lincoln-Mercury system, as shown here with gauge manifold connected.

Let's look
inside!

See why a **DFN** FILTER DRIER
is your best buy!

INLET FILTRATION (not just screens)

Large filter area—proportioned to the capacity of the drier.

Filter media of sufficient depth and density to properly filter down in the micron range.

Inlet filtration prevents desiccant from acting as a filter at reduced drying efficiency and capacity.

OUTLET FILTRATION (not just screens)

Depth micron filtration of proper density holds all fines and foreign matter within the drier.

Positive protection of expansion valve and other parts of the system.

PROCESSED GRANULAR DESICCANTS

Free of contamination—fully efficient—full capacity.

Maximum effective surface area per cu. in. of desiccant.

Quantity of desiccant based on amount of refrigerant in system.

Quality of desiccant assured by processing and packing under laboratory control.



All Brass Construction

All fittings made to industry standards

Complete range of sizes and types at leading wholesalers everywhere. Ask for DFN—first in drying, the world over.

The McIntire Company, Livingston, N. J.

DRIERS • FILTERS • STRAINERS

ponent parts of both 1956 and 1955 compressors are alike.

An oil separator was introduced during 1955 production of both systems. It is also used on 1956 models.

Discharge and suction service valves are not mounted on the compressor. Suction service valve is mounted on right fender apron beneath the hood while the discharge service valve is located on top of, or in front of, the condenser. (See Fig. 2).

Suction port of the compressor is on the left side, discharge port on the right.

An oil level sight glass is provided in the crankcase.

(To Be Continued)

AIRO stands for

Fast, dependable,
world-wide service.

Refrigeration and
Air Conditioning parts
and supplies.

Write for current Catalog

AIRO SUPPLY CO.

2732 N. Ashland Ave., Chicago 14, Ill.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS AVAILABLE

REFRIGERATING AND air conditioning engineers wanted for positions in branch offices and home office. Graduates in Mechanical Engineering preferred. Eighteen months' training courses available for new men; experienced engineers also wanted. Excellent opportunities, paying salary and commissions. Write to Personnel Director, FRICK COMPANY, Waynesboro, Pennsylvania.

OPPORTUNITY FOR manufacturers' representative: To increase your earnings, sell a full line of freezers, beverage coolers, display cases, dual temperature reach-ins and walk-ins. We manufacture a quality line to meet competition. Territories now available, write HOWARD REFRIGERATOR CO., INC., 4745 Worth Street, Philadelphia 24, Pa.

SALES ENGINEER experienced in heating and air conditioning needed to contact dealers and service contractors. Well established territory with a minimum of travel. Named brands and a complete line of parts and supplies, wholesale sales only. F. H. LANGSENKAMP CO., 333 Hydraulic Avenue, South Bend, Indiana.

WANTED: ICE cream cabinet salesmen under 45 years of age and free to travel protected territories. Must be experienced in selling low-temperature cabinets direct to the ice cream manufacturer. As we are one of the oldest and largest manufacturers of low-temperature equipment, we offer a most complete line. Salary, commission, plus travel expenses, company benefits. Write direct to WEBER SHOWCASE & FIXTURE CO., INC. Attention National Sales Department, P. O. Box 11065, Kearny Station, Los Angeles 11, California.

AIR CONDITIONING salesman — To handle sales and administration for established active York dealer-contractor. Must be experienced and qualified to accept responsibility for sales program. Attractive remuneration with liberal incentive. Call or write Mr. Raffel, YORK-MAHONING COMPANY, 232 West Boardman St., Youngstown, Ohio, Phone RI 66393.

FIELD SERVICE engineer required by food store fixture manufacturer. Must be free to travel, with 10 or more years' experience in commercial refrigeration and electricity necessary. Salary, expenses, life insurance, hospitalization insurance and other benefits. 30 to 40 years of age. Willing to move when the need arises. This company is growing and expanding its operation every year. Send photo and full facts regarding work experience, age, family status, etc. Reply to BOX A5450, Air Conditioning & Refrigeration News.

WANTED: COMMERCIAL refrigeration salesman—Old established West Coast manufacturer of a nationally-known line of refrigerated market fixtures has increased its production facilities to handle increased volume, making available opening in two choice territories. To qualify as our direct factory representative, you must be under 45, free to travel, experienced in the designing and layout of grocery stores, supermarkets, etc., and the sale of such refrigerated equipment direct to the user. Excellent remuneration based on salary, commission, and travel expenses plus company benefits. In replying, please include a resume of your background and experience which will be held in strict confidence. BOX A5470, Air Conditioning & Refrigeration News.

FIELD SALES managers—A leading manufacturer of residential air conditioning and heating equipment has several openings for experienced men due to major expansion. Address reply to BOX A5473, Air Conditioning & Refrigeration News.

FIELD ENGINEERS—A leading manufacturer of residential air conditioning and heating equipment has several openings for experienced men due to major expansion. Address reply to BOX A5474, Air Conditioning & Refrigeration News.

APPLICATION ENGINEERS — Home Office: A leading manufacturer of residential air conditioning and heating equipment has several openings for experienced men due to major expansion. Address reply to BOX A5475, Air Conditioning & Refrigeration News.

LARGE NATIONALLY known manu-

facturer of a complete line of condensing units and all popular size packaged air conditioners, residential and commercial. Permanent position, salary, car, expenses, commission. Must be willing to travel well established territory, Alabama, Georgia and Florida. Dealer contacts. Experience in this field necessary. State age, education, past connections first letter. All of our employees know of this ad. BOX A5486, Air Conditioning & Refrigeration News.

AIR CONDITIONING man experienced in calculating and estimating year-round air conditioning for a large national plumbing and heating concern located in Central Ohio. State experience and all particulars. Good salary and opportunity. BOX A5488, Air Conditioning & Refrigeration News.

WANTED—TWO district managers: One to be located in Metropolitan New York area and one in San Francisco. To supervise sales offices of prominent manufacturer of heating, cooling, and air conditioning equipment of East and West Coast areas. Send complete resume of education, experience, and salary requirements, to BOX A5489, Air Conditioning & Refrigeration News.

DESIGN ENGINEER—For commercial refrigerators—At least 5 years' sheet metal experience—Eastern manufacturer of restaurant and market equipment—Needs top-notch man—capable of supervising model shop and assuming responsibility—Company growth makes this opportunity available. Write to BOX A5490, Air Conditioning & Refrigeration News.

REPRESENTATIVES WANTED: We have several mid-western and southern territories open for manufacturers' representatives to sell a fast moving air conditioning accessory to wholesale outlets. If you are now calling on air conditioning equipment and supply houses, this is a natural for you. BOX A5491, Air Conditioning & Refrigeration News.

SALES ENGINEER wanted for refrigeration and air conditioning contractors office in N. Y. C. established 25 years. Opportunity to purchase interest in business. Resume must state amount willing to invest. Our employees know of this ad. BOX A5492, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

URGENTLY REQUIRE several '54, '55, or '56 window air conditioners. Must be priced right for volume purchaser. ASSOCIATED MECHANICAL SERVICES, 2446 University Avenue, St. Paul, Minnesota.

EQUIPMENT FOR SALE

NEW IMPROVED Kesco automatic condensate water disposal pumps, for air conditioners, ice-cube bins and drinking fountains, featuring a 9 in. high 3 gallon welded heavy steel hot dipped galvanized tank, with 2 gallon emergency reservoir; 1/2" pipe inlet 1 1/2" inches from floor, 4 inches water in tank starts pump. At your local wholesaler.

MT. VERNON, Eastern Supply, 521 East Third Street
NEW YORK, Abco Refrigeration, 1615 Second Avenue
WHITE PLAINS, County Seat, 111 Central Avenue
DAYTON, OHIO, W. H. Kieffaber Co., Refrigeration Department
SACRAMENTO, CALIF., Associated Refrigeration, 1717 Eye Street.

NATIONALLY-FAMOUS HERMETIC units at fabulous discounts! 1/2 h.p. to 1/4 h.p. domes from \$29.50. Hermetic units with air-cooled finned condenser attached, 1/2 and 3/4 h.p., from \$34.50. Complete unit assembly with fan-cooled condenser (less dome) for use with 1/2, 3/4 or 1 h.p. dome, only \$9.00. 1/2 h.p. static condensers—95¢ each. Many other parts at equal savings. All equipment brand new, ready for immediate shipment. Write or phone for descriptive literature. MANN REFRIGERATION SUPPLY CO., 440 Lafayette St., New York, N. Y.

AIR CONDITIONING value: 3 h.p. hermetic compressor F-12 230V. 1/2 phase HD200. 2 h.p. air cond. evaporator 23 1/2" L x 16" H x 3 3/4" W. 2 h.p. air cond. condenser 24" L x 24" H x 4 1/4" W. Also included 2 ton F-12 T. X. Valve & dual pressure safety cutout switch. Complete matched component kit as described \$179.50. Freight prepaid anywhere in the continental U. S. A. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

FOR SALE: Food market, hotel, restaurant equipment and supply business and building, floor space 5000 square feet. Several major franchises, covering parts of West Virginia, and Virginia. Good trading area. Reason for selling bad health. Write giving brief personal background and financial references. BOX A5487, Air Conditioning & Refrigeration News.

15 NEMA Firms Sell 3,993,603 Refrigerators During 1955

Summary for December and Year, 1955

Complete Electric Household Refrigerators Only—Sales by Sizes—Units

DECEMBER (13 Companies)				
Sizes	Domestic	Canadian	Foreign	Total
1. 3 cu. ft. (3.4 & under)...	1,458	16	1	1,475
2. 4 cu. ft. (3.5 to 4.4)....	6	—	3	9
3. 5 cu. ft. (4.5 to 5.4)....	841	—	305	1,146
4. 6 cu. ft. (5.5 to 6.4)....	10,254	489	969	11,712
5. 7 cu. ft. (6.5 to 7.4)....	45,705	4,724	5,527	55,956
6. 8 cu. ft. (7.5 to 8.4)....	8,981	133	2,281	11,395
7. 9 cu. ft. (8.5 to 9.4)....	54,001	1,097	4,171	59,269
8. 10 cu. ft. (9.5 to 10.4)...	56,020	702	3,060	59,782
9. 11 cu. ft. (10.5 to 11.4)...	77,291	668	1,045	79,004
10. 12 cu. ft. (11.5 to 12.4)...	*32,086	*188	*513	*32,787
11. 13 cu. ft. (12.5 & over)...	286,643	8,017	17,875	312,535
12. Total				
Refrigerators Having Two Exterior Doors (All Sizes Included In Above).....				
	70,957	337	1,335	72,529
YEAR, 1955 (13-15 Companies)				
Sizes	Domestic	Canadian	Foreign	Total
1. 3 cu. ft. (3.4 & under)...	17,141	16	609	17,766
2. 4 cu. ft. (3.5 to 4.4)....	440	146	695	1,281
3. 5 cu. ft. (4.5 to 5.4)....	21,959	1	5,546	27,506
4. 6 cu. ft. (5.5 to 6.4)....	109,250	7,168	17,012	133,430
5. 7 cu. ft. (6.5 to 7.4)....	761,409	14,378	101,773	867,560
6. 8 cu. ft. (7.5 to 8.4)....	414,624	12,153	31,053	457,830
7. 9 cu. ft. (8.5 to 9.4)....	604,738	18,736	23,438	646,912
8. 10 cu. ft. (9.5 to 10.4)...	695,070	8,244	26,457	729,771
9. 11 cu. ft. (10.5 to 11.4)...	767,817	7,100	14,077	788,994
10. 12 cu. ft. (11.5 to 12.4)...	*302,718	*2,387	*8,034	*313,139
11. 13 cu. ft. (12.5 & over)...	3,685,160	70,329	238,108	3,993,603
12. Total				
Refrigerators Having Two Exterior Doors (All Sizes Included In Above).....				
	680,199	6,329	14,661	701,189

*Combined to prevent possible disclosure.

Participating companies: Admiral Corp.; Crosley & Bendix Home Appliances Div., Avco Mfg. Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Quicfred, Inc.; Servel, Inc.; Westinghouse Electric Corp.; Whirlpool-Seeger Corp. (formerly Seeger Refrigerator Co.); Deepfreeze Appliance Div., Motor Products Corp. (out 12-1-55); International Harvester Co. (out 10-1-55).

11 NEMA Firms' Distributors' Refrigerator Sales by States

SALES OF ELECTRIC HOUSEHOLD REFRIGERATORS BY DISTRIBUTORS TO DEALERS BY STATES

SUMMARY FOR YEAR, 1955
Reports were received from 11 companies

States	Units
Alabama	48,673
Arizona	19,489
Arkansas	31,752
California	292,316
Colorado	31,018
Connecticut	51,926
Delaware	8,830
District of Columbia	51,291
Florida	111,468
Georgia	71,608
Idaho	8,462
Illinois	181,547
Indiana	106,613
Iowa	44,064
Kansas	27,418
Kentucky	43,125
Louisiana	53,333
Maine	14,265
Maryland	44,485
Massachusetts	83,807
Michigan	183,373
Minnesota	51,476
Mississippi	29,027
Missouri	95,709
Montana	9,851
Nebraska	26,976
Nevada	5,565
New Hampshire	9,328
New Jersey	112,507
New Mexico	10,016
New York	363,625
North Carolina	63,754
North Dakota	8,942
Ohio	194,790
Oklahoma	40,055
Oregon	27,429
Pennsylvania	210,041
Rhode Island	23,626
South Carolina	34,179
South Dakota	10,001
Tennessee	62,261
Texas	167,298
Utah	12,221
Vermont	4,121
Virginia	50,603
Washington	40,928
West Virginia	35,865
Wisconsin	61,021
Wyoming	3,541
Total United States	3,273,553

Participating companies: Admiral Corp.; Crosley & Bendix Home Appl. Div., Avco Mfg. Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Servel, Inc.; Westinghouse Electric Corp.; Deepfreeze Appliance Div., Motor Products Corp. (out 12-1-55); International Harvester Co. (out 10-1-55).

Norge Names Mackle

CHICAGO—William P. Mackle has been appointed regional sales manager of Norge home appliances for Pennsylvania, Maryland, Virginia, West Virginia, and District of Columbia.

during the year—the 12-cu. ft. size was runner-up with 788,994 units and the 11-cu. ft. size was a strong third with 739,771 units.

During 1954, the 8-cu. ft. size was far out in front with 825,904 sales. Second spot was taken by the 10-cu. ft. size with 584,756 units. Third went to the 9-cu. ft. size, fourth to the 11-cu. ft. size, and fifth to the 12-cu. ft. and over size group, all containing more than 500,000 units.

This year, the 10-cu. ft. size group, with 646,912 units sold, dropped to fourth position. Less than 180,000 refrigerators of less than 8 cu. ft. were sold in 1955.

The trend to larger size units was even more noticeable in December sales figures. For the last month in the year, the 12-cu. ft. size group was far out in front. Neck and neck behind it were the 11 and 10-cu. ft. groups. The 8-cu. ft. size was relegated to fourth place.

SUPER-FLO
FILTER-DRIER
UP TO 5 TONS
NO PRESSURE DROP
MOLDED REMCAL DRYING
FIBERGLAS DEPTH FILTERING
Check Super-Flo's amazing low price, for both original equipment and replacement, against ordinary driers which do not have Super-Flo molded drying elements, massive fiberglass depth filters and spun-end copper shells. Available to the trade through wholesalers everywhere.
REMCO INCORPORATED
ZELLENOPLE, PA.

NAME YOUR AIR CONDITIONING JOB!
Evaporative Condensers
Forced Draft Cooling Towers
Natural Draft Cooling Towers
STA-RITE PUMPS install easily cost less!
It's faster, easier, less expensive to install Sta-Rite Type AC pumps. These pumps are small, easy-to-handle. Because you can rotate the discharge outlet; there are no "fitting-in" headaches. Install—and forget service worries, too. Why? Bronze impellers; full-power motors; leak-proof seal. Best of all try this one for price.

STA-RITE PRODUCTS, INC.
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Ask your wholesaler. And write for copy of new bulletin describing Sta-Rite Air Conditioning Pumps.

IN CANADA: STA-RITE PUMPS (CANADA) LTD., AJAX, ONTARIO

"A CASE OF COOL JUDGMENT"
FLO-COLD
DRINKMASTER
STAINLESS STEEL
CUBER—COOLER.
SOLD THRU DEALERS ONLY
WRITE
United Friguator Engrs.
MENOMINEE, MICH.
AVAILABLE IN SIZES 4 to 10 FT.



SEEN CONFERRING are Louis R. Zeamans (l.), sales manager of Brewer-Titchener Corp.'s newly-established beverage cooler division, and Frederic A. Celler, BTC vice president in charge of sales.

BTC Adds to Line

(Concluded from Page 1, Col. 4) now in effect will be continued by BTC.

The new line will in no way affect sales and distribution policies for BTC dairy, frozen food, ice cream cabinets, and ice cube makers."

Louis R. Zeamans, associated with Artkraft Mfg. Co. since 1933, has been appointed sales manager for the new BTC beverage cooler division. Zeamans will make his headquarters at the firm's New Milford plant.

Gabriel Comba, formerly chief engineer at Artkraft, has been retained by Brewer-Titchener to assist in the transfer of Artkraft production lines to New Milford. First shipments of BTC-Artkraft beverage coolers from New Milford are expected to begin in April.

Boepple Named --

(Concluded from Page 1, Col. 2)

sales personnel to new positions as regional sales managers and district managers.

The reorganized Sales Dept. will be headed by George J. Boepple as director of sales. The newly appointed regional sales managers and district managers are as follows:

Eastern region—Thomas J. Phillips, with headquarters in New York City; northern region—Richard N. Meyer, with headquarters in Chicago; southern region—Arley L. Baker, with headquarters in St. Louis; western region—Pacific Scientific Co., with headquarters in San Francisco and Los Angeles.

Two new district managers have been appointed, W. B. Knox in Atlanta and W. W. Hull in St. Louis. Additional field engineers have also been added in New York, Kansas City, New Orleans, and Miami.

The company also announces that construction has been started on additional factory facilities adjoining its main plant, which it is estimated will permit an increase in production capacity of at least 50%.

Truck Units Now Available

THE ROVAN ALL-ELECTRIC TRUCK REFRIGERATION UNIT is available to qualified dealers in Manhattan, Bronx, Staten Island, Brooklyn, Queens, and Long Island territories. For full information, write distributor:

CAPCO PRODUCTS CO., INC.
40-14 149th Place
Flushing, L. I., New York

ARI Reports 130,000 Central Units Installed In '55; '56 To Go Higher

WASHINGTON, D. C. — At least 130,000 U. S. homes were completely air conditioned with central cooling units during 1955, an increase of 68.5% over the 77,150 residences air conditioned the previous year, according to the Air-Conditioning and Refrigeration Institute issued recently.

The central air conditioning plants installed in homes were in addition to the 1,300,000 room air conditioner units sold at the consumer level in 1955, an increase of 30% over the previous year.

George S. Jones, Jr., managing director of the institute, said that the 130,000 figure for central cooling units is probably conservative, but that a more accurate figure would be difficult to get. The total given is based

on manufacturers' shipment figures, he said.

Jones predicted that the sales of central air conditioning units would break all records in 1956. "The mass production of the central units has brought about a reduction in the cost of home cooling. This may mean that air conditioning will become standard throughout the country for new dwellings."

Firm Gets Charter

FAYETTEVILLE, N. C. — Blanton-Brown Refrigeration Co. has been granted a charter of incorporation listing capital stock of \$100,000, subscribed stock \$43,000. Incorporators: John C. Brown, Nathan Blanton, and George M. Zimmerman, all of Fayetteville, N. C.

Heating, Conditioning Management Offered by Northwestern Mar. 26-7

CHICAGO—A two-day course in management techniques for heating and air conditioning dealers will be held Mar. 26-27 on the Northwestern university Chicago campus.

Designed to help dealers increase their sales and service volumes and to boost their profit margins, the course will be sponsored by 15 members of National Heating & Airconditioning Wholesalers, Inc. It will be conducted by the Northwestern university school of commerce. Enrollment will be on an invitational basis only, and will be limited to dealers with a sales volume of \$100,000 or less.

The management course will cover legal organization, financing, and profits. Also to be dis-

cussed are customer contracts, FHA loans, insurance protection, and human relations.

Coordinators for the course are Charles R. Bennett, general manager of Armstrong Heating & Supply Co. of Chicago, and Henry E. Theobald, assistant dean of the Northwestern school of commerce.

General Controls Opens Branch In Winnipeg

GLENDALE, Calif.—General Controls Co. Ltd. [Canadian] has opened a new factory branch office at 1462 Erin St., Winnipeg, Man. Canada.

With the purchase of Perfex Ltd. last April, General Controls Ltd. expanded its manufacturing facilities to include a complete line of oil burner controls.

Harold Lowe was appointed manager of the new General Controls Winnipeg factory branch.



NEW 'BC' UNITS

EXTEND RANGE OF
BUSH AIR COOLED
CONDENSERS
to 20 TONS...



NEW Bush 'BC' Blower Condensers permit air conditioning and refrigeration systems to operate without water . . . provide the answer to excessive water costs, limited supply, excessive impurities or disposal problems.

Available in capacities up to the 20 Tons, new Bush 'BC' Blower Condensers feature low noise level . . . quiet operation.

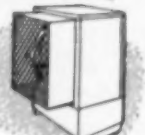
Patented Inner-Fin coil construction, a Bush exclusive, makes these the most compact units on the market. Units are easy to install, have rugged all-steel cases with durable rust-resistant finish . . . are available arranged with either blower fan or propeller fan.

The BUSH line of water-savers, most complete in the industry, also includes:

'CDT' COPPER DECK COOLING TOWERS with all copper decking, 'IEC' INNER-FIN EVAPORATIVE CONDENSERS featuring patented inner-fin coils. Both units available with blower or propeller fan. Capacities from 3 to 90 Tons.

'PFC' PROPELLER FAN CONDENSERS — Two basic models, 2.2 Tons and 3.3 Tons can be combined by mounting in banks to obtain any desired tonnage.

'PS' PRESSURE STABILIZERS — automatically maintain satisfactory head pressure when air cooled condensers operate outside in low ambient temperatures.



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